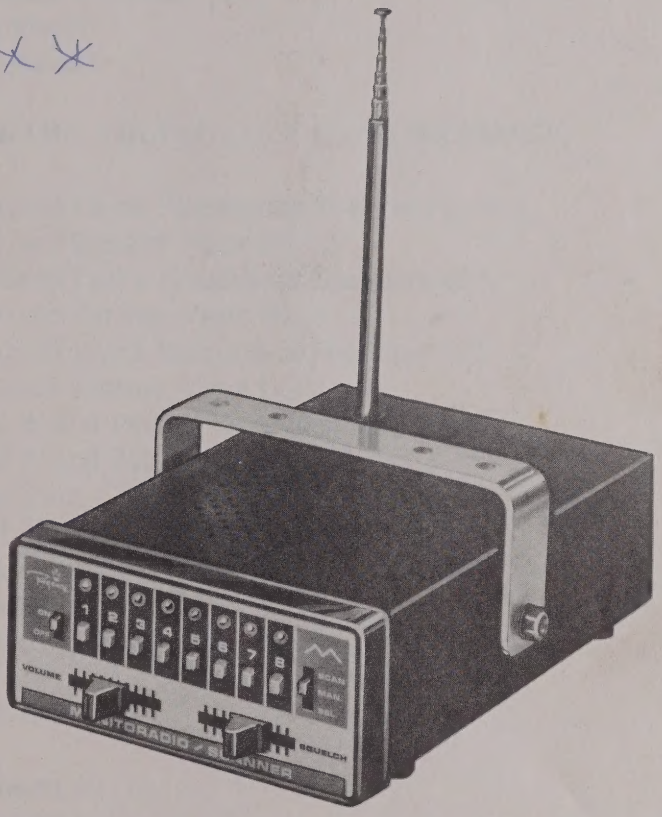
e.g. 817
MC 1550P
SC 5282P

Regency® ELECTRONICS INC.

SERVICE MANUAL

S.N. = 170 - x xxx



MODEL: ACT-M8H,L,H/L
MONITORADIO RECEIVER

7707 RECORDS STREET
INDIANAPOLIS, INDIANA 46226

PRINTED IN U.S.A.
1-75

PRICE $5.00
SM10–531

SERVICE MANUAL

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SECTION 1 SPECIFICATIONS AND CIRCUIT DESCRIPTION

1-1 SPECIFICATIONS (Subject To Change Without Notice)

RECEIVER -MODEL ACT-M 8 H/L

Frequency Range
- Low Band..... 30-50 MHz
- High Band..... 150-174 MHz

Frequency Separation
- Low Band..... 6 DB Bandwidth; 33-47 MHz
  10 DB Bandwidth; 30-50 MHz
- High Band..... 8 MHz (maximum sensitivity)
  12 MHz (usable sensitivity)

Sensitivity
- Low Band..... 0.5 microvolt for 20 DB quieting
- High Band..... 0.6 microvolt for 20 DB quieting

Squelch Sensitivity (Threshold)
- Low Band..... 0.3 Microvolt
- High Band..... 0.4 Microvolt

RECEIVER -MODEL ACT-M 8 H

Frequency Range..... 150-174 MHz

Frequency Separation..... 8 MHz (maximum sensitivity)
12 MHz (usable sensitivity)

Sensitivity (At Tune-Up)..... 0.6 microvolt for 20 DB quieting

Squelch Sensitivity (Threshold)..... 0.4 Microvolt

RECEIVER -MODEL ACT-M 8 L

Frequency Range..... 30-50 MHz

Frequency Separation..... 6 DB Bandwidth; 33-47 MHz
10 DB Bandwidth; 30-50 MHz

Squelch Sensitivity (Threshold)..... 0.3 Microvolt

FOR ALL MODELS

Selectivity	6 DB @ ±7 KHz 50 DB @ ±18 KHz
Spurious Rejection (Excluding Primary Image)	50 DB
Adjacent Channel Rejection	50 DB
Modulation Acceptance	±7 KHz
I.F. Frequencies	1st I.F.: 10.7 KHz 2nd I.F.: 455 KHz (ceramic filter)
Scanning Rate	Approx. 15 channels per sec.
Audio Output (8 Ohm Speaker)	1 Watt @ 5%, or less, distortion; 2 Watts, maximum

SCANNER

Scan Rate	Approx. 15 Channels per sec.
Scan Delay	Approx. 1/2 sec.

POWER

Voltage Requirement	117 VAC (±10%), 60 Hz, 13 Watts Max. 13.8 VDC (±10%) 9 Watts Max.
Fuse Size	1.5 Amp., 3AG

GENERAL

Front Panel Size	5 5/8" x 2 5/16"
Depth (Including Knobs and Rear Panel Connectors)	9"
Antenna Connectors	Motorola Type
Speaker Size	4 inch square, 8 Ohm
Antenna Connector	4-pin, polarized

1-2 CRYSTAL SPECIFICATIONS

Miniature plug-in crystals are utilized in the receiver. Because of the high accuracy (close tolerance) required, Shepherd Industries' crystals are recommended. If the crystals are ordered from Regency, it is only necessary to specify Part No. 301-532 for High Band crystals and the desired receive frequency, or Part No. 301-542 for Low Band crystals and the desired receive frequency.

If desired, the crystals may be purchased from other manufacturers. The following specifications must be included in the order:

High Band Crystal (ACT-M 8 H/L & 8 H Only):

a. Crystal frequency, determined as follows:
   $$\text{Crystal frequency} = \frac{\text{Channel frequency} - 10.7\ \text{MHz}}{3}$$

   EXAMPLE:
   $$\text{Crystal frequency} = \frac{155.55\ \text{MHz} - 10.7\ \text{MHz}}{3} = \frac{144.85\ \text{MHz}}{3} = 48.2833\ \text{MHz}$$

b. Frequency Tolerance of .001%
c. 3rd Overtone
d. Series resonance minus 450 Hz
e. Maximum equivalent series resistance of 35 ohms
f. Drive level of 2 MW
g. Holder: HC-25/U

Low Band Crystal (ACT-M 8 H/L & 8 L Only):

a. Crystal frequency, determined as follows:
   Crystal frequency = Channel frequency +10.7 MHz

   EXAMPLE:
   Crystal frequency = 39.5 MHz +10.7 MHz = 50.2000 MHz

b. Frequency Tolerance of .001%
c. 3rd Overtone
d. Series resonance minus 450 Hz
e. Maximum equivalent series resistance of 35 ohms
f. Drive level of 2 MW
g. Holder: HC-25/U

1-3 CRYSTAL INSTALLATION AND BAND PROGRAMMING

Prior to installing a crystal, the receiver's cover will have to be removed. To remove the cover, first remove the telescopic antenna if it is installed. Second, unscrew the two large bolts located at the sides of the unit. The cover may then be slipped off by sliding it toward the rear of the unit.

Insert the crystal in the proper socket pins as indicated on the Crystal Location Diagram. See Diagram 3-10. The number by each pair of sockets matches the channel number on the front panel.

The following must be performed on model ACT-M 8 H/L only. If the crystal inserted is for the High Band (148-174 MHz), place the proper color-coded wire and socket onto the proper High Band pin; if the crystal is for the Low Band (30-50 MHz), place the proper wire and socket onto the proper Low Band pin. See Diagram 3-10.

NOTE: If a particular channel is not used (in other words, there is no crystal installed for that channel), the band selection wire must still be connected to either a High Band pin or to a Low Band pin. Thus, for proper scanner operation, all of the band selection wires MUST be connected, even though not all channels are used.

After the crystals are installed and any necessary band programming changes are completed, reinstall the cover.

1-4 MAIN BOARD

Q101 is a Low VHF Band RF amplifier with broad-band tuned circuits in its input and output circuitry. The output of the RF amplifier is coupled to the input of the Low VHF Band mixer, Q102 (ACT-M 8 H/L and 8 L).

Q103 is a High VHF Band RF amplifier with broad-band circuits in its input and output circuitry. The output of the RF amplifier is coupled to the input of the High VHF Band mixer, Q104 (ACT-M 8 H/L and 8 H).

The first L.O. (local oscillator), Q105, uses third overtone crystals and operates on all channels, whether High or Low. For Low VHF Band signals, the fundamental frequency of the crystal is taken off the Emitter of Q105 for injection. For High VHF Band signals, the third harmonic of the crystal is coupled off the collector of Q105 for oscillator injection. The radio is switched between Low VHF Band and High VHF Band by transistors Q107 and Q106 (ACT-M 8 H/L only). When Q107 is conducting, operating bias is applied to Low VHF Band RF amplifier and mixer. When Q106 conducts, operating bias is applied to High VHF Band RF amplifier and mixer. Conduction of Q107 and Q106 is determined by the Band Programming pins. When that particular channel is scanned, the Low or High section is turned on depending on the band programming.

A crystal is electrically connected to the oscillator circuit when its associated diode is forward biased. Until the scanner reaches that particular channel, the diode is back biased and prevents the oscillator from operating on the crystal's frequency. When the respective channel is reached, the scanner's output line provides a low resistance path to ground, which turns the diode on (forward biases it) and effectively connects the crystal into the oscillator circuit.

The output frequency from the first mixers is 10.7 MHz, the first IF frequency. It is filtered by L107, L110 and L111 before it is fed to an Integrated circuit IC101, which contains the second mixer circuitry and the second L.O. circuitry, normally operating at 10.245 MHz. In some locations where a strong Image signal has been encountered, this oscillator's frequency is moved to 11.155 MHz. (The crystal frequency is stamped on the top of the crystal).

The 455 KHz output of IC101 (terminal 5) is coupled through a tuned circuit to the input of the ceramic filter, CF101. CF101 is a narrow-band filter centered at 455 KHz. The excellent bandpass characteristics of CF101 provide for very good adjacent channel rejection. The output of CF101 is amplified by Q116 and coupled through another tuned circuit to the input of Integrated circuit IC102. IC102 is a series of amplifiers providing approximately 60 DB gain at 455 KHz. Also included in IC102 is the Limiting Circuitry and a Quadrature Detector circuit. L115, connected between terminals 2 and 12 of IC102, is the adjustable Quadrature Coil.

The audio output from IC102 (terminal 1) is coupled to the input of the audio amplifier circuit and to the input of the noise-operated squelch circuit.

Transistor Q109 is an amplifier whose frequency response extends from approximately 5 KHz to 25 KHz. Q107 amplifies the "noise" occuring in this frequency range. The noise is coupled to the base of Q110. Q110 is used as a detector which rectifies the amplified noise and produces a DC voltage at its collector. When the DC voltage at the collector of Q110 is positive and of sufficient value to provide base bias for Q111, Q111 turns off and removes forward bias from diode CR110 and leaves it back biased. This action prevents audio from reaching the speaker and the receiver is squelched (muted). When a signal (carrier) arrives, the output from the detector Q110 is reduced to the point where the DC voltage at the base of Q111 is no longer sufficient to cause Q111 to conduct.

At this time, CR110 is forward biased and allowed to conduct normally and the audio output of the unit is heard. Audio is applied through the Volume Control to IC103. IC103 is an Integrated circuit containing a power audio amplifier, gain is internally fixed at 34 DB or 50 times and the output is short circuit proof with internal thermal limiting. The output of IC103 is connected to an 8 ohm internally mounted speaker. An external speaker can be connected to the unit, no less than an 8 ohm speaker is recommended for optimum performance.

The squelch tail circuit consists of R161, CR109, C158 and R162. This circuit is used to keep the squelch circuit open for a short time after the station signal goes off. The purpose of the squelch tail circuit is to prevent the squelch circuits from chopping very weak signals, especially mobile signals. The timing of the squelch tail can be changed by changing the value of C158; removing C158 from the circuit will remove the squelch tail completely.

The basic scanning multivibrator or clock is contained in one half of IC104 and free runs at approximately 15 Hz. The other half of IC104 is connected as a divider, which divides the clock frequency (15 Hz) by two. In turn, IC105 then divides this new frequency by two and four. These three outputs (divide by two, four and eight) are thus in the form of binary-coded decimal (BCD) outputs and are connected to IC106.

The Decoder/Driver (IC106) converts the BCD input information into decimal configuration output (0 through 7) and provides the "Low" output necessary to sequentially turn on each channel LED and diode switch for the crystal. Only one Decoder/Driver output is low at any one time; all other outputs are "high" or near the supply voltage.

When a signal is received, or the unit is switched to MANUAL, Q112 is turned on which stops the scanning action. Pressing the Scan/Manual Selector Switch applies one pulse to the scanner s multivibrator causing the multivibrator to switch to its opposite state. As a result, the scanner circuitry advances to the next channel.

4-4 CONTROL BOARD 302-249

Item No.	Description	Part No.
	DIODES	
LD201	Diode Led Red	4810-1282-900
LD202	Diode Led Red	4810-1282-900
LD203	Diode Led Red	4810-1282-900
LD204	Diode Led Red	4810-1282-900
LD205	Diode Led Red	4810-1282-900
LD206	Diode Led Red	4810-1282-900
LD207	Diode Led Red	4810-1282-900
LD208	Diode Led Red	4810-1282-900
	CAPACITOR	
C201	.1mf ±20% 12V	1502-0104-005
	RESISTORS	
R201	Variable Strol 10K (Audio)	4752-5107-501
R202	Variable Strol 7.5K (Squelch)	4752-5107-502
R203	390 ohm, 10%, ½W	4701-0391-044
R204	390 ohm, 10%, ½W	4701-0391-044
R205	390 ohm, 10%, ½W	4701-0391-044
R206	390 ohm, 10%, ½W	4701-0391-044
R207	390 ohm, 10%, ½W	4701-0391-044
R208	390 ohm, 10%, ½W	4701-0391-044
R209	390 ohm, 10%, ½W	4701-0391-044
R210	390 ohm, 10%, ½W	4701-0391-044
	SWITCHES	
SW201	Switch, Slide Spdt	5113-3221-002
SW202	Switch, Slide Spdt	5113-3221-002
SW203	Switch, Slide Spdt	5113-3221-002
SW204	Switch, Slide Spdt	5113-3221-002
SW205	Switch, Slide Spdt	5113-3221-002
SW206	Switch, Slide Spdt	5113-3221-002
SW207	Switch, Slide Spdt	5113-3221-002
SW208	Switch, Slide Spdt	5113-3221-002
SW209	Switch, Slide Spdt	5113-3221-002
SW210	Switch, Slide 2P 3POS	5113-3221-104
	MISCELLANEOUS	
	Spring	2513-5107-100
	Spacer, Paper	2800-1288-702

4-5 CHASSIS ASSEMBLY

Item No.	Description	Part No.
	ELECTRICAL COMPONENTS	
R1	1 Meg ½W 10%	4701-0105-044
C1	.005mf +80%−20% 1.4 KV (Disc)	1501-0502-002
T1	Transformer, Power	5604-5100-600
ANT-1	Telescoping Antenna (H/L & L)	1201-5108-802
ANT-1	Telescoping Antenna (H)	1201-5108-801
J1	Antenna Connector	2105-0000-005
P1	Connector, Chassis, Power	2105-1279-100
SPK-1	Speaker, 8 ohm 4″ Sq. Assembly	1301-5101-100
	AC Power Cord Assembly	6041-3215-900
	DC Power Cord Assembly	7011-1047-800
	MECHANICAL COMPONENTS	
	Front Panel (Bezel)	1405-6037-902
	Faceplate	2403-5107-400
	Knob, Volume and Squelch	2402-3167-002
	Socket Pins, Crystal	2803-3216-400
	Terminal Board 3 Lug (Rear Panel)	2103-3007-907
	Cabinet/Wrap Assembly	1408-6039-301
	Feet, Rubber	1402-3231-902
	Bracket Mobile Mounting	1400-3198-600
	Manual, Owner's Instruction (H/L)	7001-1053-100
	Manual, Owner's Instruction (H)	7001-1053-400
	Manual, Owner's Instruction (L)	7001-1053-600
	Manual, Service ($5.00 Prepaid)	SM-10-531

SECTION 2 ALIGNMENT AND TUNING PROCEDURE

2-1 EQUIPMENT REQUIRED

2-1-1 FM Signal Generator
2-1-2 Oscilloscope
2-1-3 AC VTVM

NOTE: During all steps of alignment, the squelch control should be in the maximum clockwise position (minimum squelch action).

All receivers should be aligned to the channel nearest the center of the frequency range in the band over which they will operate.

2-2 QUADRATURE DETECTOR

2-2-1 Connect the FM Signal Generator to the antenna input jack. Accurately set the frequency to the center of the channel being used for alignment. Modulate Signal Generator with 1000 Hz, 3 KHz deviation.

2-2-2 Connect the Oscilloscope to Junction of C150, C161 and R148.

2-2-3 Adjust Signal Generator's output until all of the noise in the scope pattern just disappears.

2-2-4 Adjust L115 for maximum peak to peak amplitude, while maintaining symmetry of the detected signal. When L115 is properly aligned, signal at above Junction should be approximately 0.2 volts RMS with test signal input as noted in 2-2-1.

2-3 IF ALIGNMENT

2-3-1 Pre-set the cores of L107, L110 and L111 9 turns in from the outer end of the coil form.

2-3-2 Connect AC voltmeter to the Junction of R143 and the collector of Q108.

2-3-3 Set AC voltmeter to the 300 millivolts scale.

2-3-4 With generator accurately set to the frequency of the center of the channel being used for alignment, increase Signal Generator's output until AC voltmeter reading is mid-range.

2-3-5 Adjust L107, L110 and L111 (in that order) for maximum AC voltmeter reading. Readjust Signal Generator's output to maintain voltmeter reading approximately in the mid-range. Repeat adjustment until no further improvements can be made.

2-4 RF ALIGNMENT

LOW BAND SECTION (ACT-M 8 H/L & 8 L)

2-4-1 Pre-set the cores of L102 and L103 one turn from the outer ends of the coil form. (NOTE: Due to the broadness of the Low Band Section, pre-setting the above cores will give you optimum performance over the entire band).

HIGH BAND SECTION (ACT-M 8 H/L & 8 H)

2-4-2 Connect AC voltmeter to the Junction of R143 and the collector of Q108.

2-4-3 Set AC voltmeter to the 300 millivolts scale.

2-4-4 Activate High Band channel nearest to center of High Band frequencies being used.

2-4-5 With Signal Generator accurately set to the frequency of the center of the channel being used for alignment and connected to antenna input jack, increase Signal Generator's output until AC voltmeter reading is mid-range.

2-4-6 Adjust L109, L104, L105 and L106 (in that order) for maximum AC voltmeter reading. Readjust Signal Generator's output to maintain voltmeter reading approximately in the mid-range. Repeat adjustment until no further improvements can be made.

2-5 NOISE BALANCE ADJUSTMENT

NOTE: This adjustment may be required only if excessive "ignition noise" is encountered. Usually, the "noise" problem is caused by improper or inadequate noise suppression of the vehicle's ignition system.

2-5-1 Using a "T" connector, connect the FM Signal Generator and the Noise Generator to the antenna input jack. If a "T" connector is not available, connect the FM generator to the antenna jack and feed in the noise signal by means of a 3 or 4 turn loop coupled to the input coil, L206.

2-5-2 Connect the Oscilloscope to the Junction of Q109's emitter and Q110's collector, or to the speaker terminals.

2-5-3 Apply a 3 to 10 microvolt signal, as accurately as can be set to the exact channel frequency (carrier only, no modulation), and adjust the output of the Noise Generator until spikes are clearly seen in the audio output as viewed on the Oscilloscope. The noise spikes will be either mostly positive or negative if an unbalanced condition exists.

2-5-4 Turn L102 (Quadrature Detector Coil) until the noise spikes are equally positive or negative in their amplitude. The overall amplitude of these spikes should be much less as a balance is achieved. Usually, only a 1/4 turn, or less, is needed to obtain the proper adjustment for best noise balance. If a proper balance can not be achieved, repeat the IF and RF alignments and then try the noise balance adjustment again.

SECTION 3 DIAGRAMS, VOLTAGE DATA AND SCHEMATIC

3-1 MAIN BOARD PARTS PLACEMENT DIAGRAM (H/L)

3-2 MAIN BOARD BOTTOM VIEW (H/L)

3-3 MAIN BOARD PARTS PLACEMENT DIAGRAM (H)

3-4 MAIN BOARD BOTTOM VIEW (H)

3-5 MAIN BOARD PARTS PLACEMENT DIAGRAM (L)

3-6 MAIN BOARD BOTTOM VIEW (L)

3-7 CONTROL BOARD PARTS PLACEMENT DIAGRAM

3-8 CONTROL BOARD BOTTOM VIEW

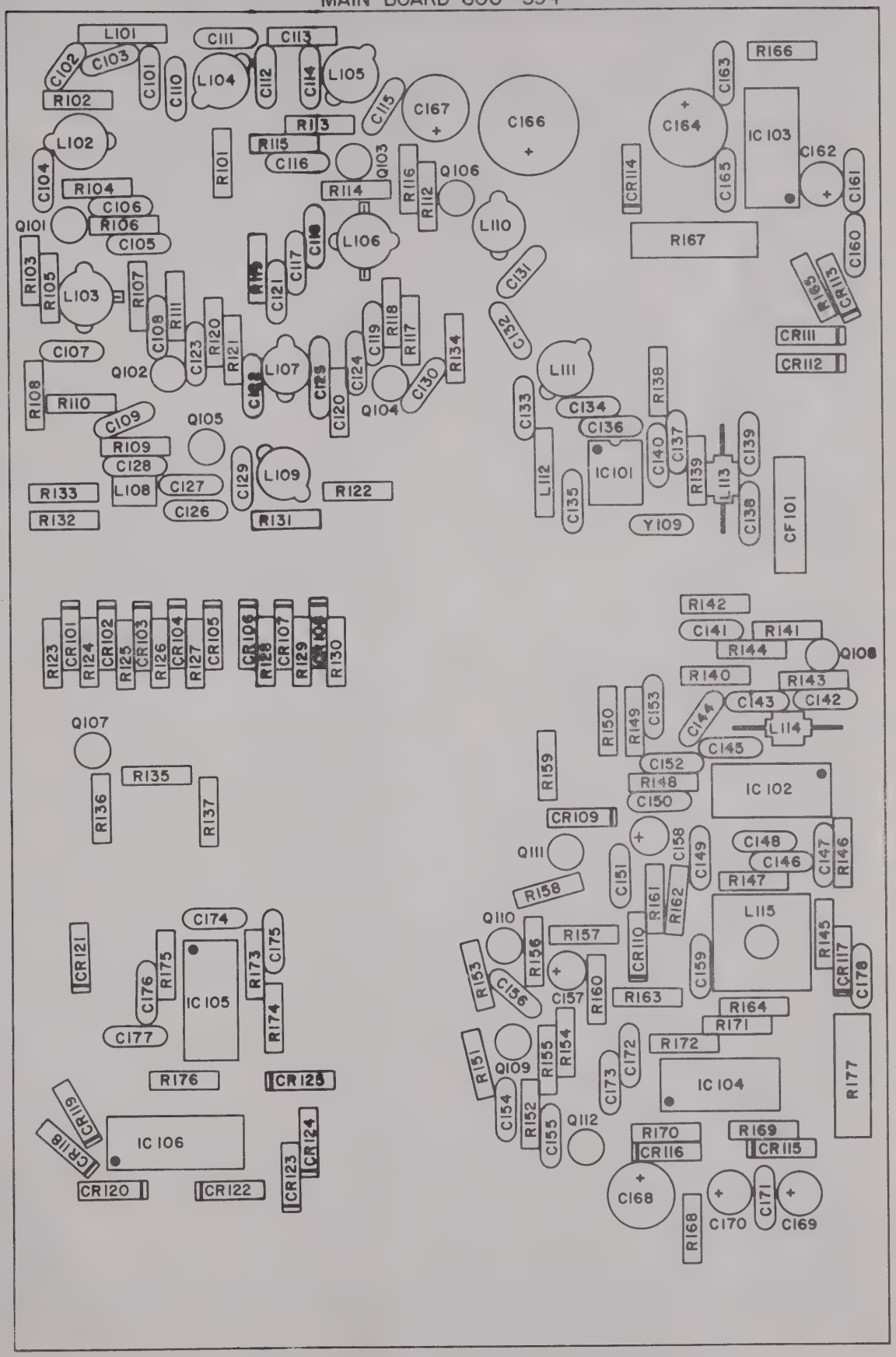
3-9 VOLTAGE DATA

3-10 CRYSTAL LOCATION DIAGRAM

3-11 SCHEMATIC (ACT-M8H/L)

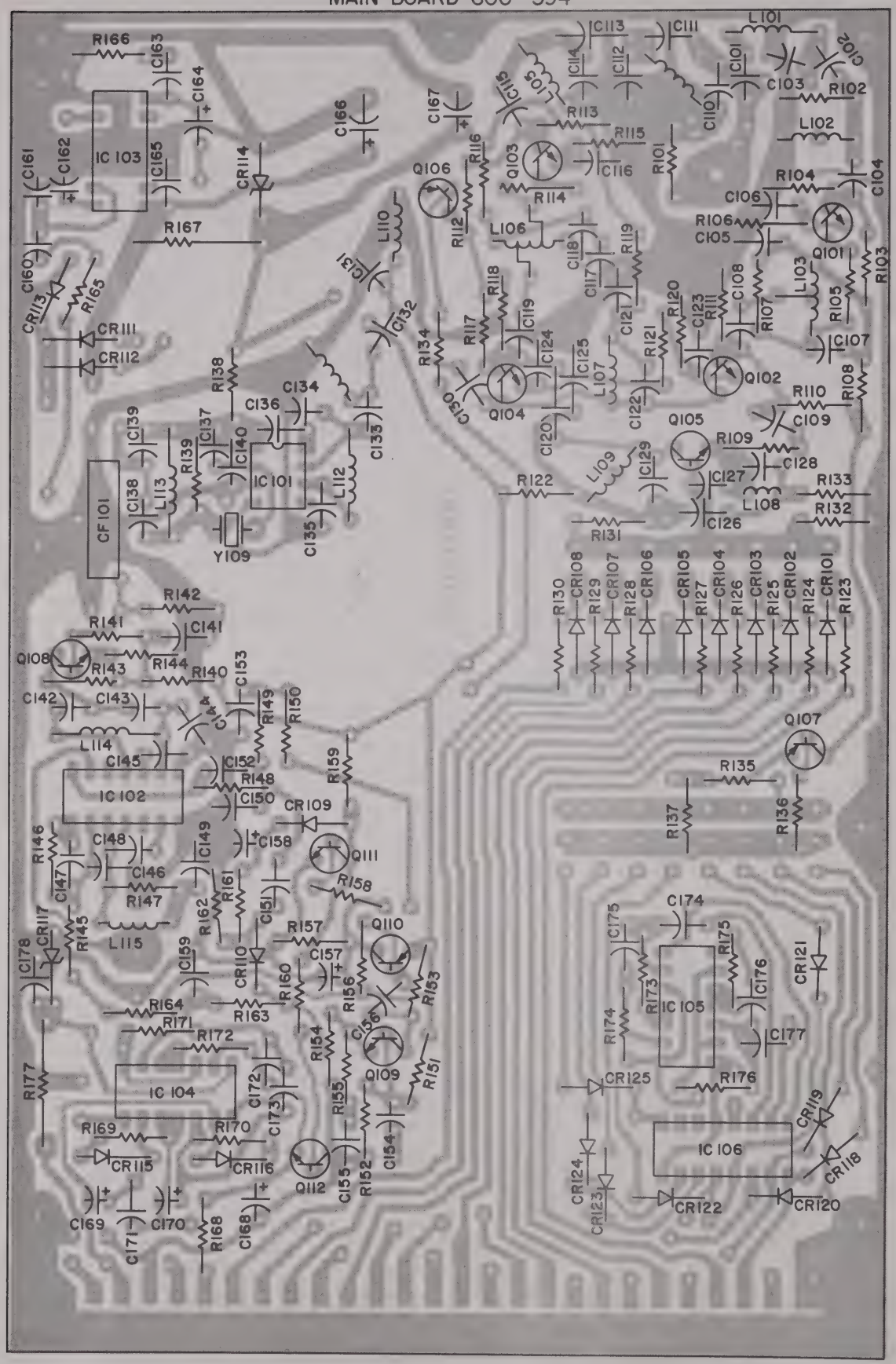
3-12 SCHEMATIC (ACT-M8H)

3-13 SCHEMATIC (ACT-M8L)

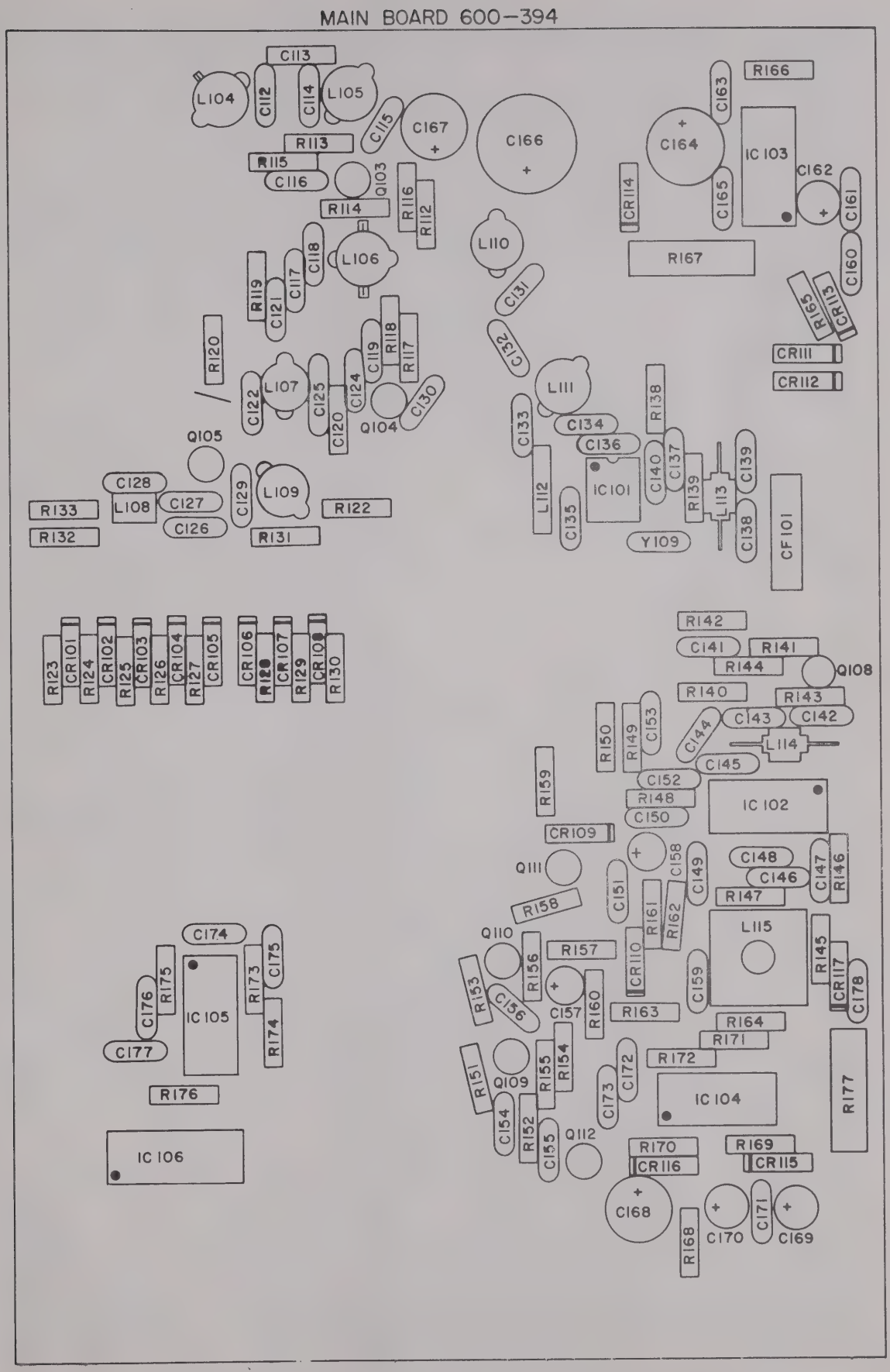


3-1 MAIN BOARD PARTS PLACEMENT DIAGRAM (H/L)

MAIN BOARD 600–394

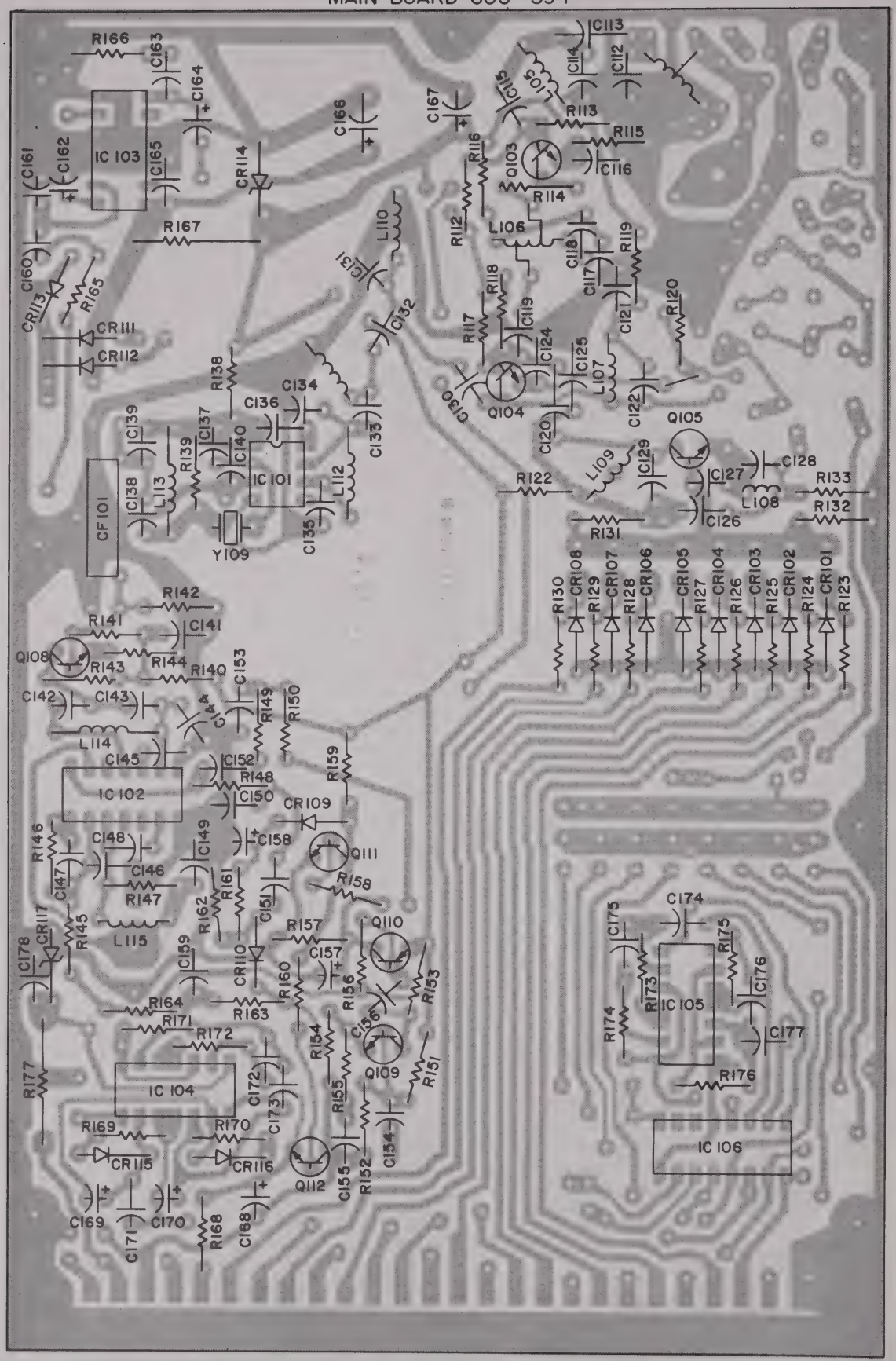


3-2 MAIN BOARD BOTTOM VIEW (H/L)

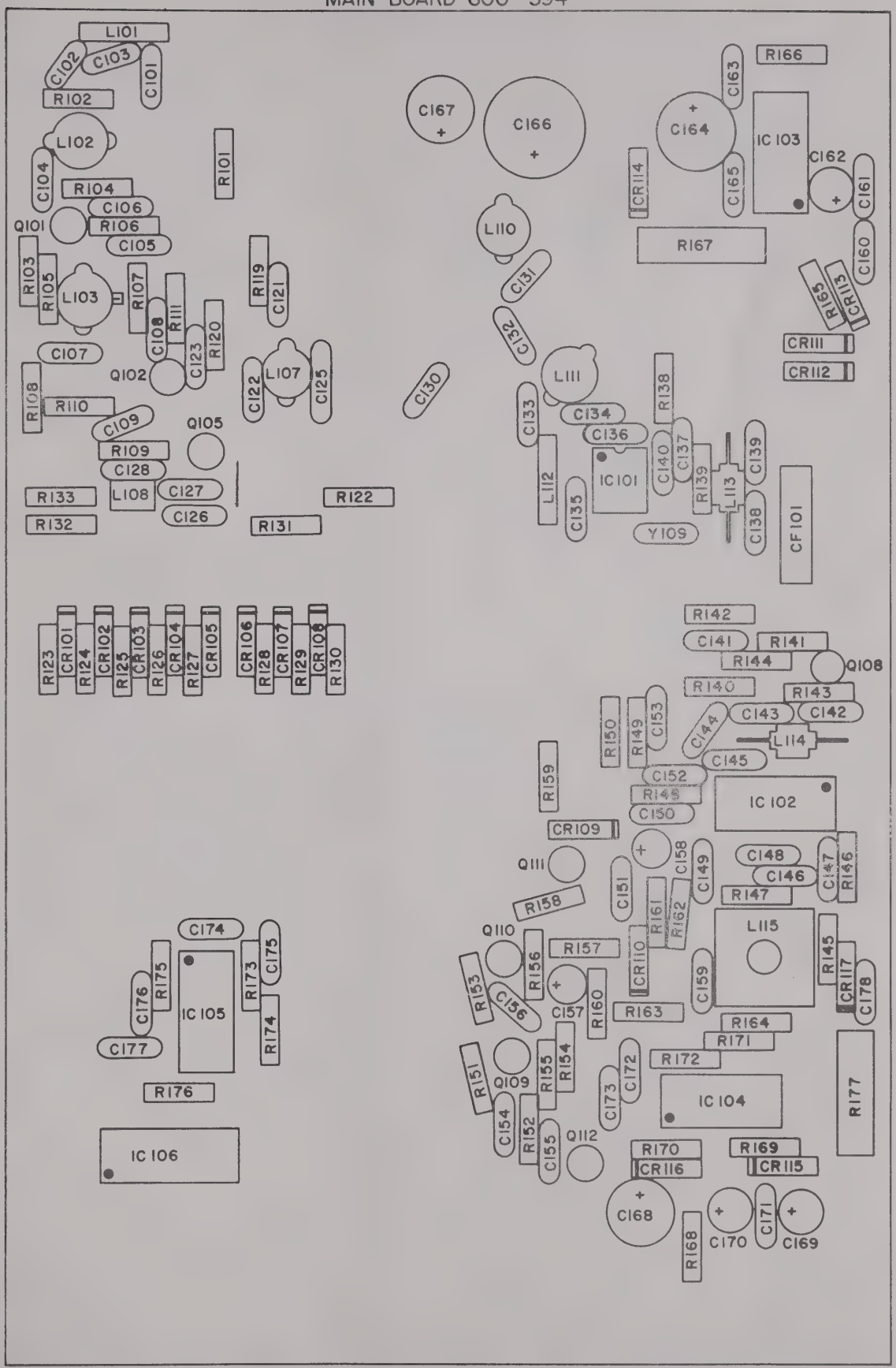


3-3 MAIN BOARD PARTS PLACEMENT DIAGRAM (H)

MAIN BOARD 600–394

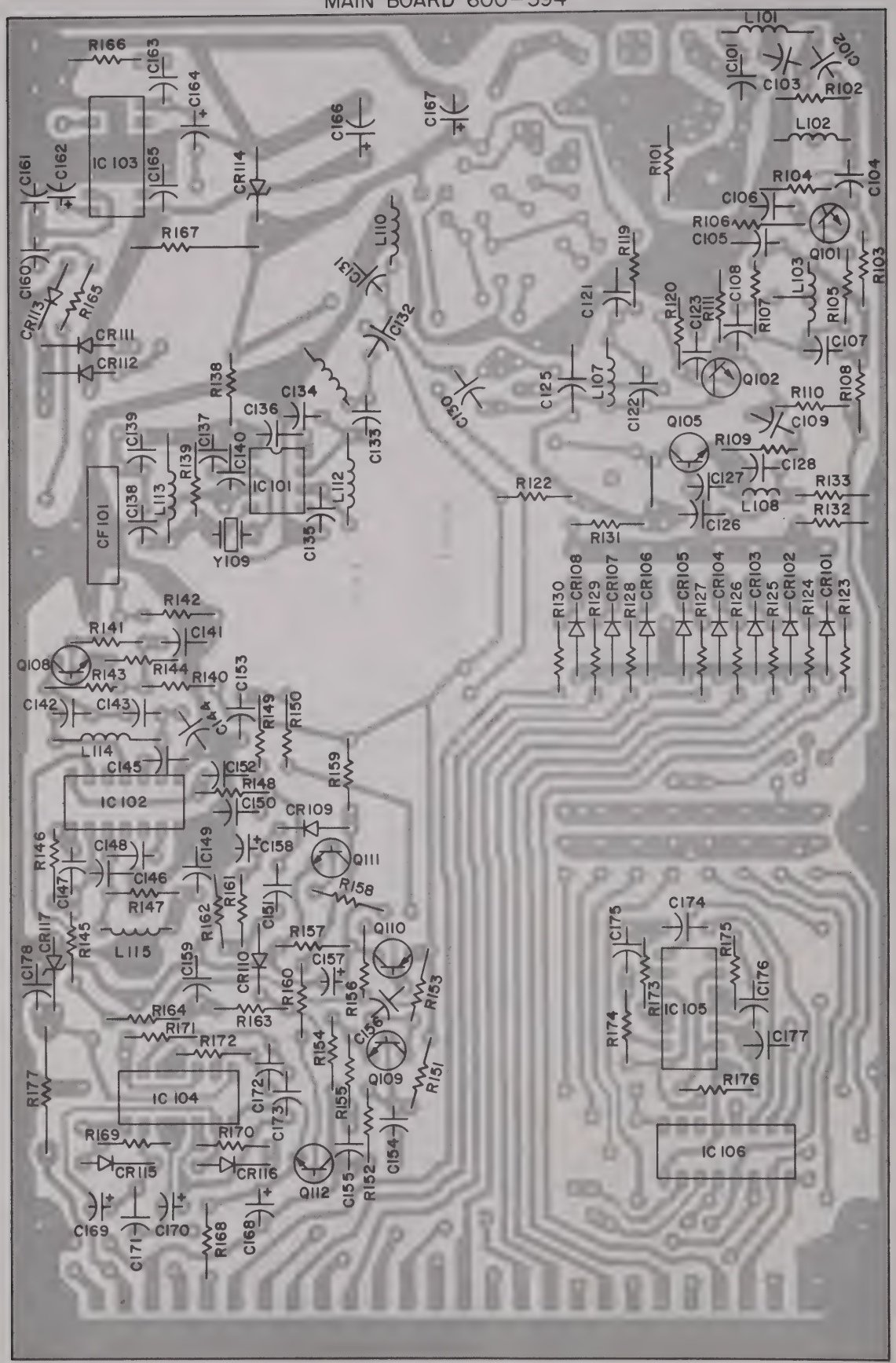


3-4 MAIN BOARD BOTTOM VIEW (H)

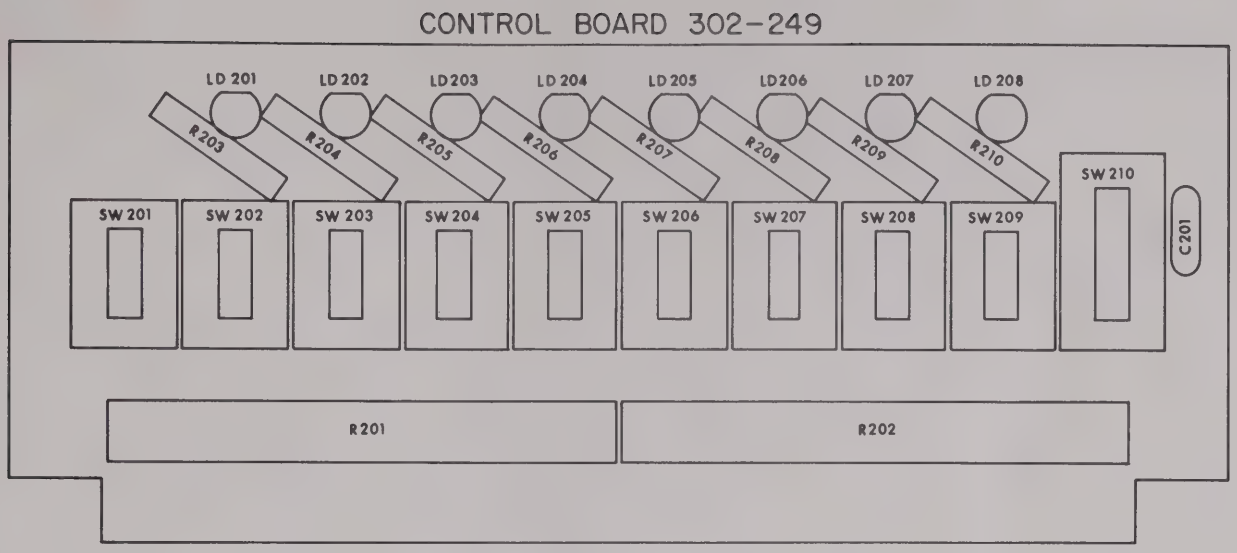


3-5 MAIN BOARD PARTS PLACEMENT DIAGRAM (L)

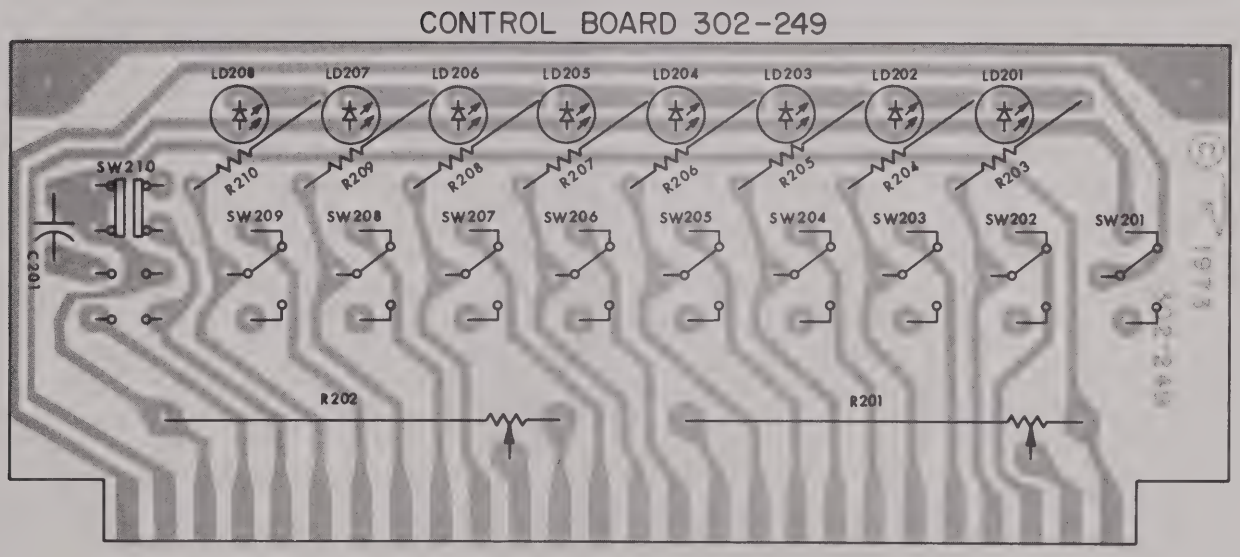
MAIN BOARD 600–394



3-6 MAIN BOARD BOTTOM VIEW (L)



3-7 CONTROL BOARD PARTS PLACEMENT DIAGRAM



3-8 CONTROL BOARD BOTTOM VIEW

3-9 VOLTAGE DATA

NOTE: All voltages are nominal and are measured with a VTVM. SCAN indicates the unit is scanning. MAN indicates the unit is not scanning and is stopped at channel 1. A "P" beside a voltage indicates that the meter reading is pulsating (fluctuating) because the scanner section of the unit is operating.

VOLTAGE DATA -- SEMICONDUCTORS:

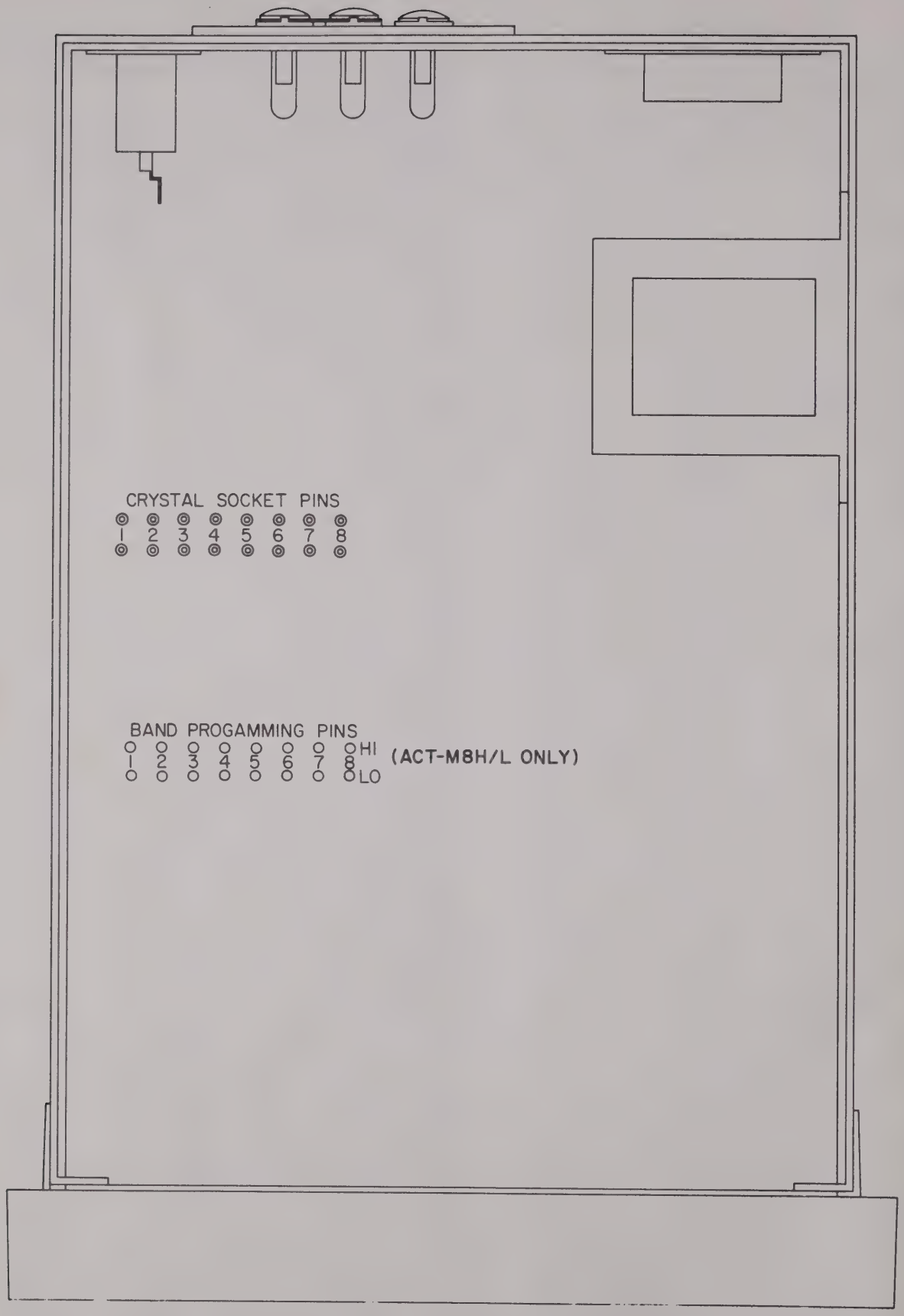
Transistor	Emitter	Base	Collector	
Q101	3.1	3.8	7.0	Low Band Activated
	0	0	0	High Band Activated
Q102	1.6	2.3	7.7	Low Band Activated
	1.6	0	7.7	High Band Activated
Q103	0	0	8.2	Low Band Activated
	3.1	3.8	7.9	High Band Activated
Q104	1.6	0	7.7	Low Band Activated
	1.6	2.3	7.7	High Band Activated
Q105	3.7	4.4	7.4	No Crystal
	3.4	4.0	7.4	With Crystal
Q106 (PNP)	8.2	8.2	0	Low Band Activated
	8.2	7.5	8.1	High Band Activated
Q107 (PNP)	8.2	7.5	8.1	Low Band Activated
	8.2	8.2	0	High Band Activated
Q108	0.4	1.1	4.5	
Q109	1.0	1.7	5.0	
Q110	8.2	8.2	0	(Unsquelched)
	8.2	8.2	1.0	(Squelched)
	8.2	8.2	1.5	Min. (Tight Squelched)
Q111	0	0	7.2	(Unsquelched)
	0	0.8	0.2	(Squelched)
	0	0.8	0.1	(Tight Squelched)
Q112	0	0	1.5	(SCAN)
	0	0.8	0.1	(MAN)

VOLTAGE DATA (CONTINUED)

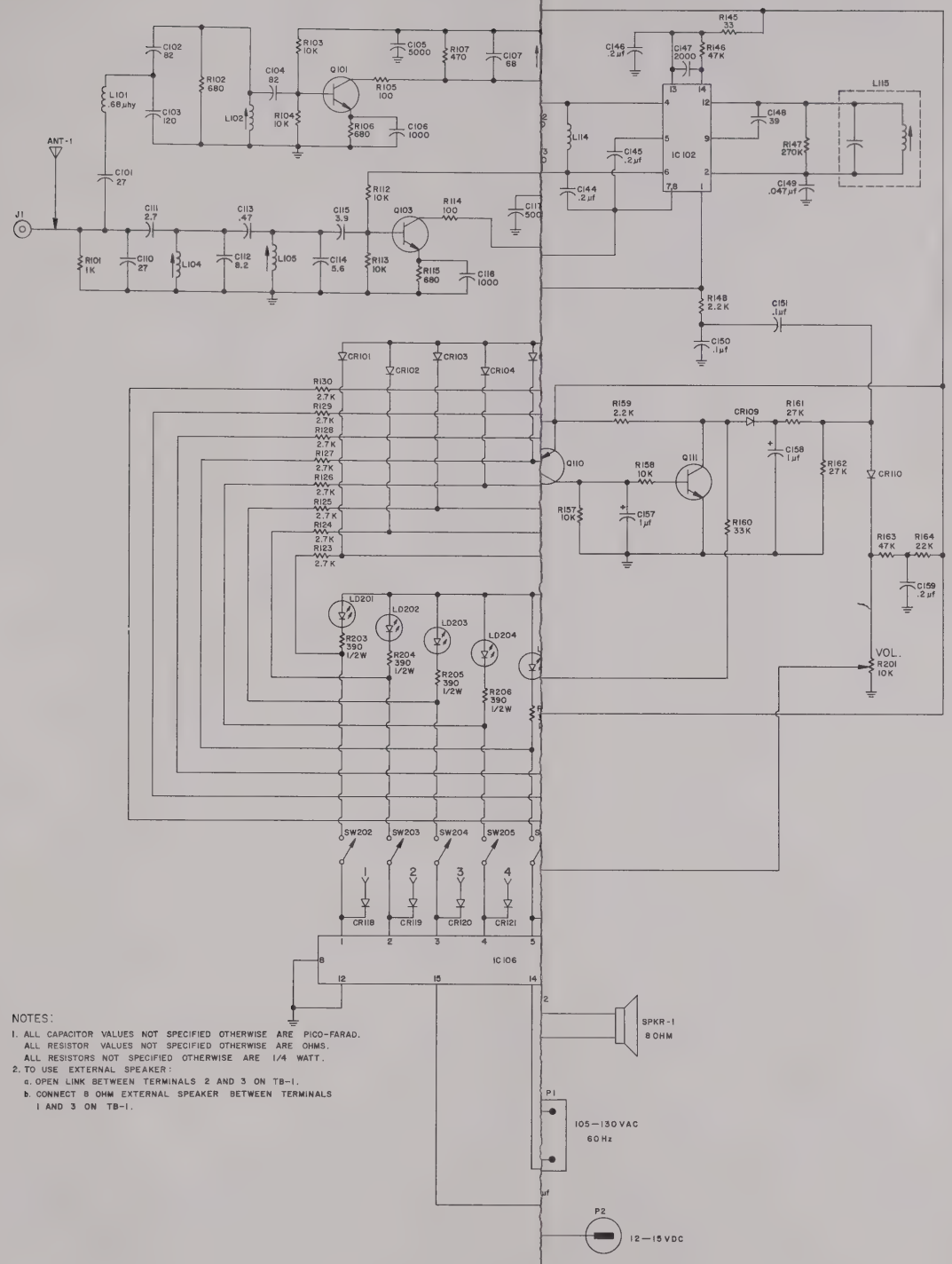
INTEGRATED CIRCUITS

NOTE: A "P" beside a voltage indicates that the meter reading is pulsating (fluctuating) because the scanner section of the unit is operating. MAN indicates the unit is not scanning and is at channel 1 (M301 is lighted).

IC No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
IC 101	4.2	0.7	0.7	4.2	7.8	0	4.2	7.8	–	–	–	–	–	–	–	–	
IC102	4.0	3.5	0	1.3	1.3	1.3	0	0	0.2	1.4	2.9	3.5	7.6	5.0	–	–	
IC103	7.1	.01	0	0	0	.01	0	6.9	0	0	0	0	0	13.8	–	–	
IC104	.1	.2	3.0	1.2	1.2	.2	0	.1	1.4	3.2	3.2	.1	3.2	5.1	–	–	
	1.4	1.2	1.4	1.2	1.2	1.6	0	2P	2P	2P	2P	2P	2P	5.1	–	–	
IC105	1.4	3.2	.1	.1	3.2	3.2	0	.1	1.4	3.2	3.2	.1	3.5	5.1	–	–	
	2P	2P	2P	2P	2P	2P	0	2P	2P	2P	2P	2P	2P	5.1	–	–	
IC106	.5	11.2	11.2	11.2	11.2	11.2	11.2	0	1.0	1.0	1.0	0	.1	.1	.1	5.1	Manual
	9P	9P	9P	9P	9P	9P	9P	0	1.0	1.0	1.0	0	2P	1P	2P	5.1	SCAN



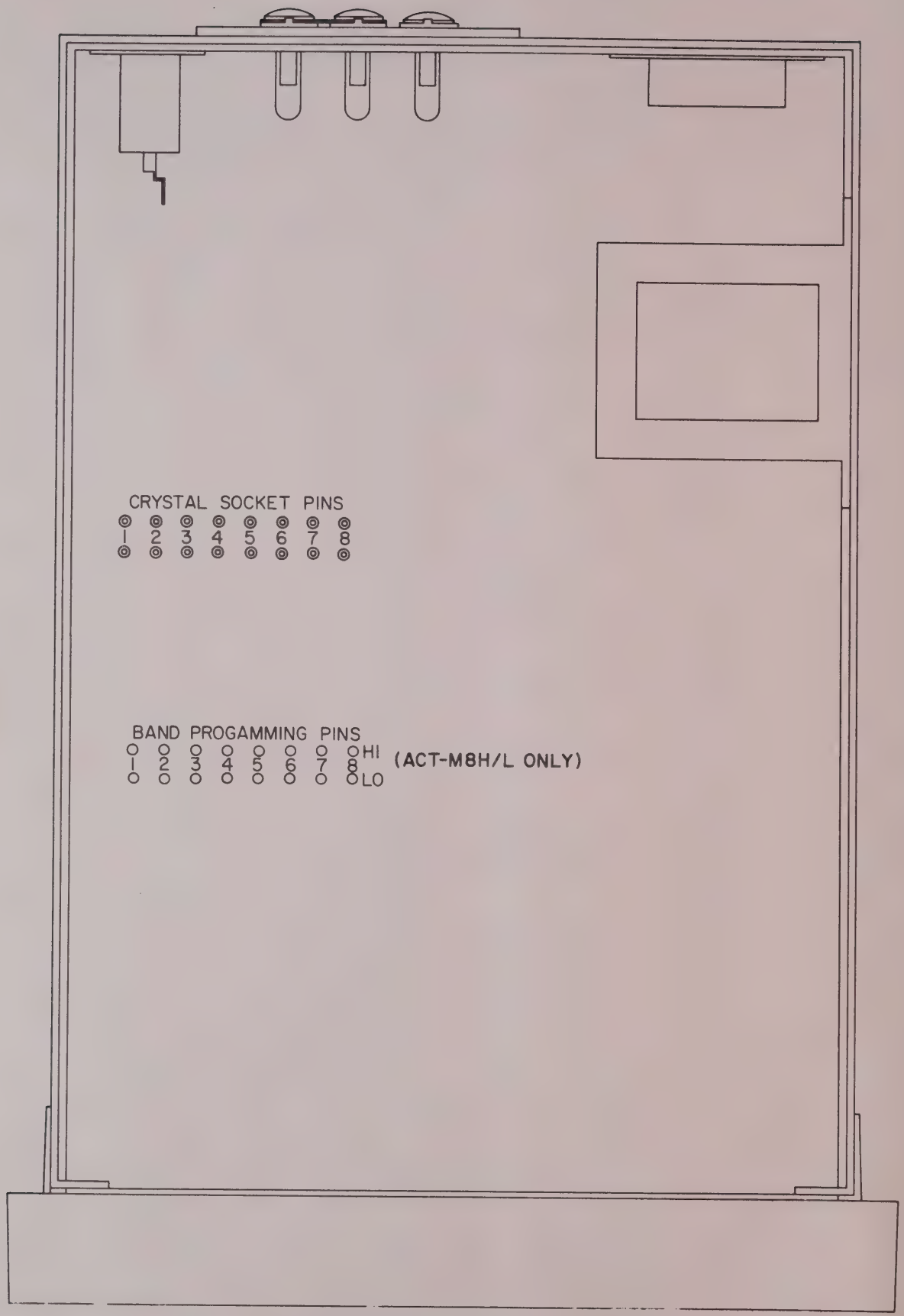
3-10 CRYSTAL LOCATION DIAGRAM



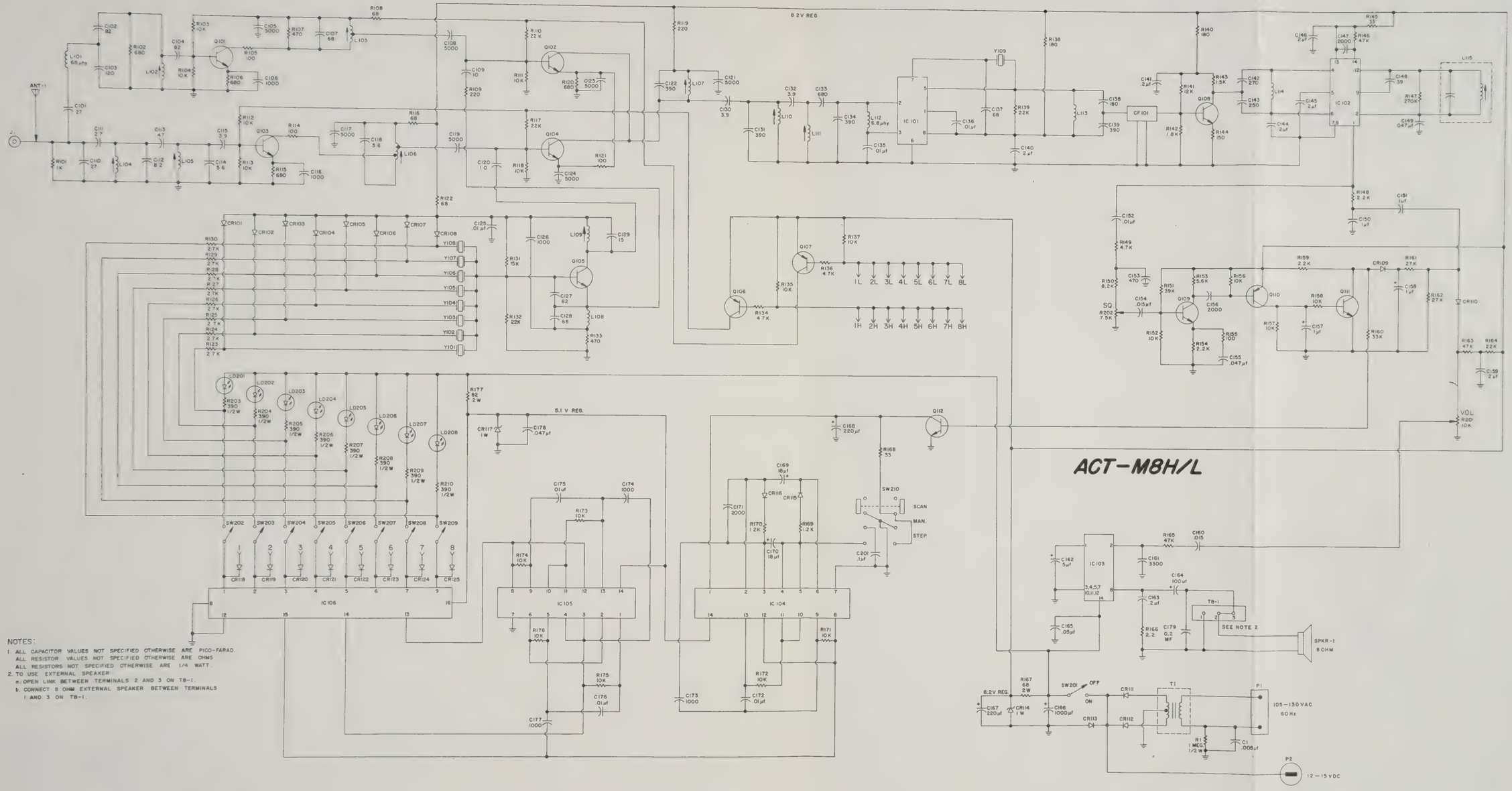
NOTES:

1. ALL CAPACITOR VALUES NOT SPECIFIED OTHERWISE ARE PICO-FARAD. ALL RESISTOR VALUES NOT SPECIFIED OTHERWISE ARE OHMS. ALL RESISTORS NOT SPECIFIED OTHERWISE ARE 1/4 WATT.
2. TO USE EXTERNAL SPEAKER:
   a. OPEN LINK BETWEEN TERMINALS 2 AND 3 ON TB-1.
   b. CONNECT 8 OHM EXTERNAL SPEAKER BETWEEN TERMINALS 1 AND 3 ON TB-1.

3-11 SCHEMATIC (ACT-M8H/L)



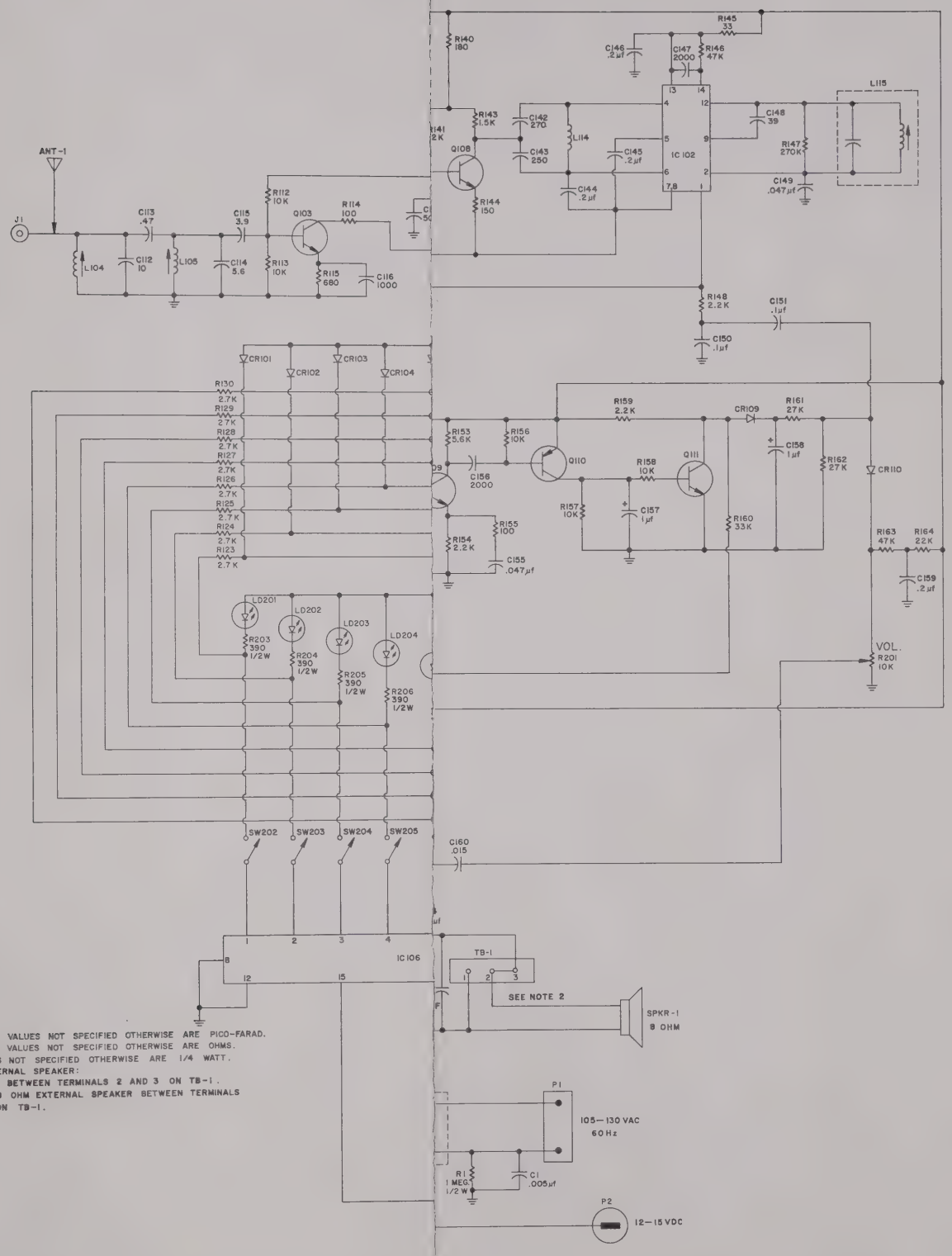
3-10 CRYSTAL LOCATION DIAGRAM



NOTES:

1. ALL CAPACITOR VALUES NOT SPECIFIED OTHERWISE ARE PICO-FARAD.
   ALL RESISTOR VALUES NOT SPECIFIED OTHERWISE ARE OHMS
   ALL RESISTORS NOT SPECIFIED OTHERWISE ARE 1/4 WATT.
2. TO USE EXTERNAL SPEAKER
   a. OPEN LINK BETWEEN TERMINALS 2 AND 3 ON TB-1.
   b. CONNECT 8 OHM EXTERNAL SPEAKER BETWEEN TERMINALS 1 AND 3 ON TB-1.

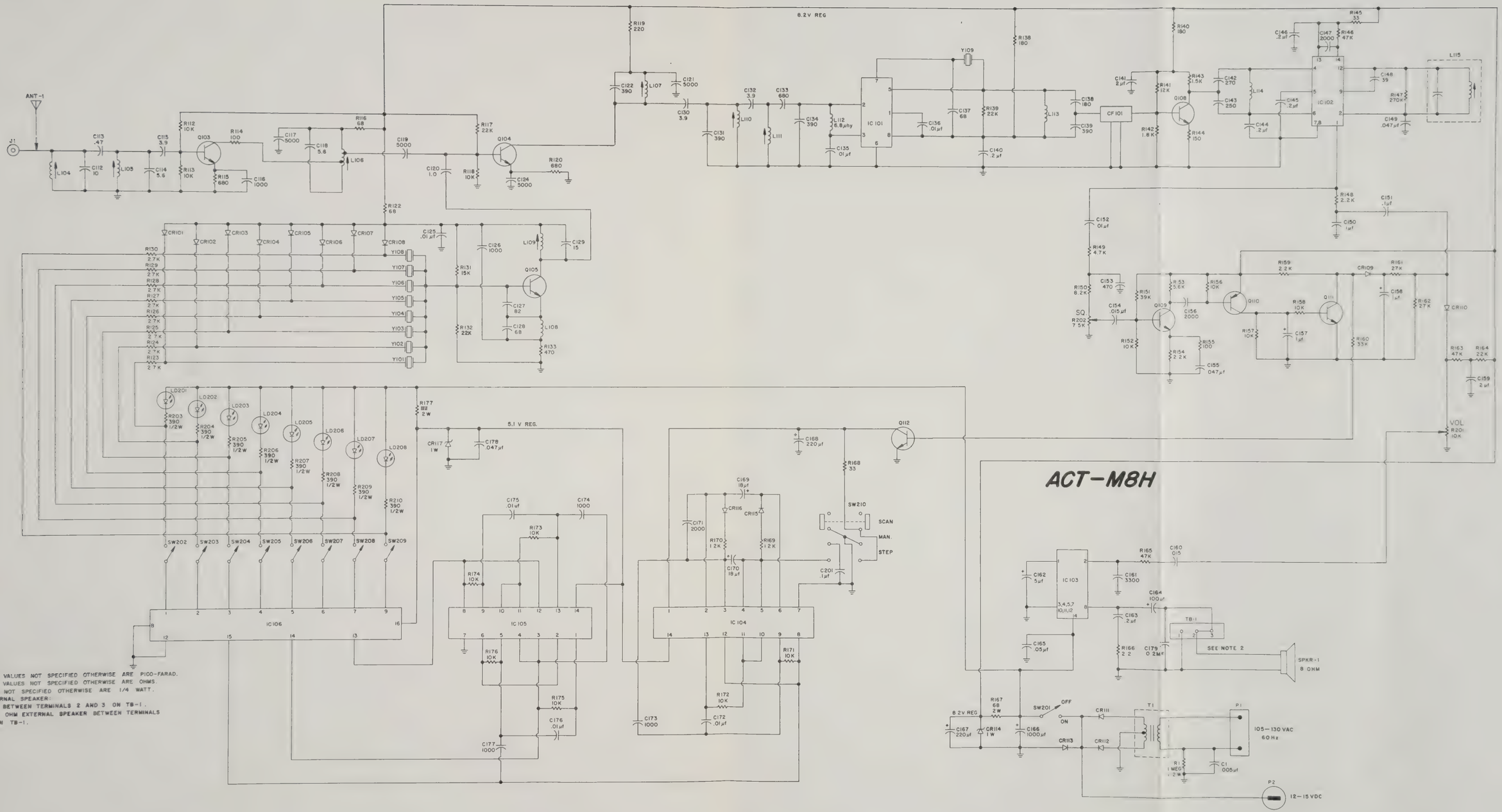
3-11 SCHEMATIC (ACT-M8H/L)



NOTES:

1. ALL CAPACITOR VALUES NOT SPECIFIED OTHERWISE ARE PICO-FARAD.
   ALL RESISTOR VALUES NOT SPECIFIED OTHERWISE ARE OHMS.
   ALL RESISTORS NOT SPECIFIED OTHERWISE ARE 1/4 WATT.
2. TO USE EXTERNAL SPEAKER:
   a. OPEN LINK BETWEEN TERMINALS 2 AND 3 ON TB-1.
   b. CONNECT 8 OHM EXTERNAL SPEAKER BETWEEN TERMINALS 1 AND 3 ON TB-1.

3-12 SCHEMATIC (ACT-M8H)

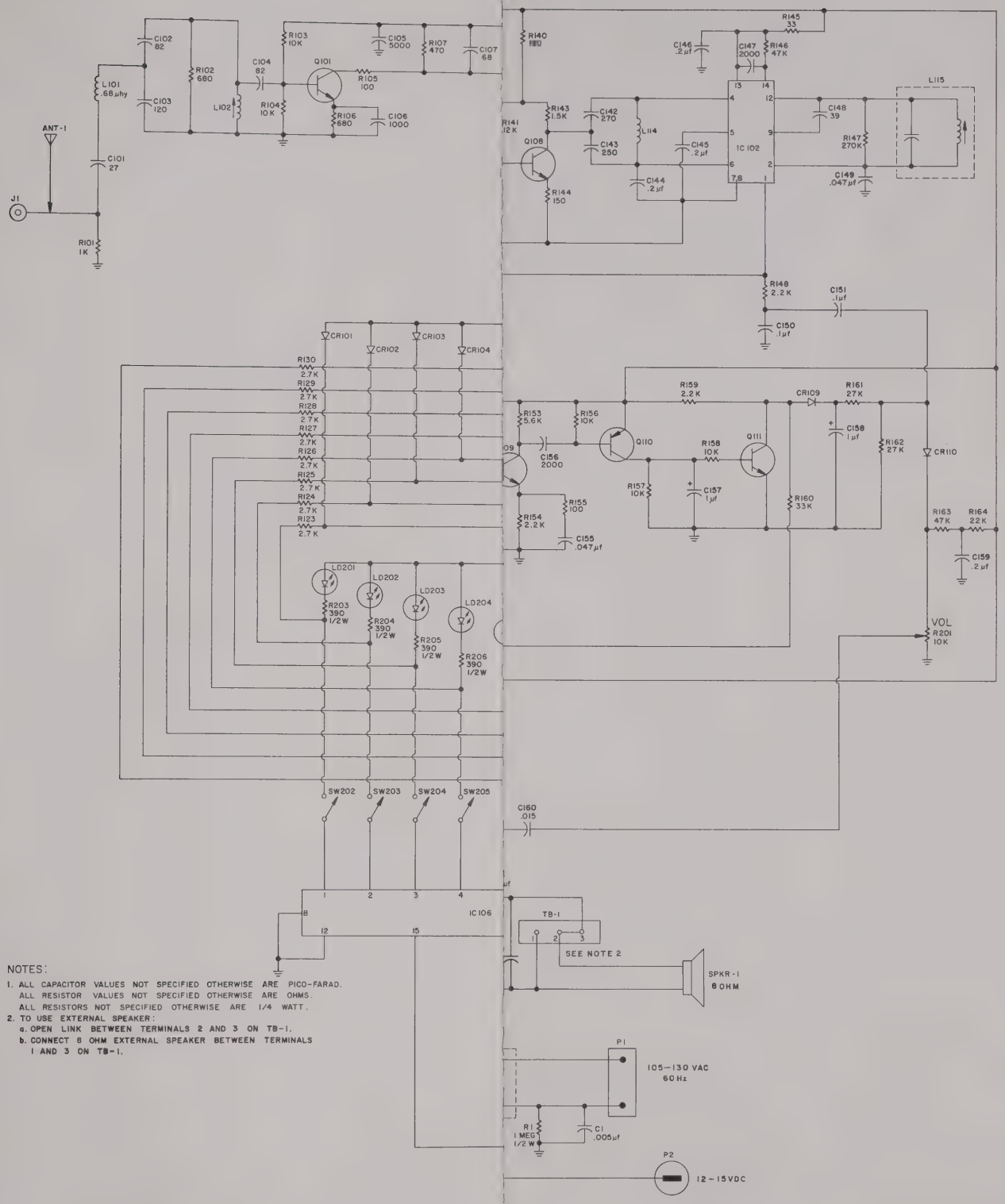


ACT–M8H

NOTES:

1. ALL CAPACITOR VALUES NOT SPECIFIED OTHERWISE ARE PICO-FARAD.
   ALL RESISTOR VALUES NOT SPECIFIED OTHERWISE ARE OHMS.
   ALL RESISTORS NOT SPECIFIED OTHERWISE ARE 1/4 WATT.
2. TO USE EXTERNAL SPEAKER:
   a. OPEN LINK BETWEEN TERMINALS 2 AND 3 ON TB-1.
   b. CONNECT 8 OHM EXTERNAL SPEAKER BETWEEN TERMINALS 1 AND 3 ON TB-1.

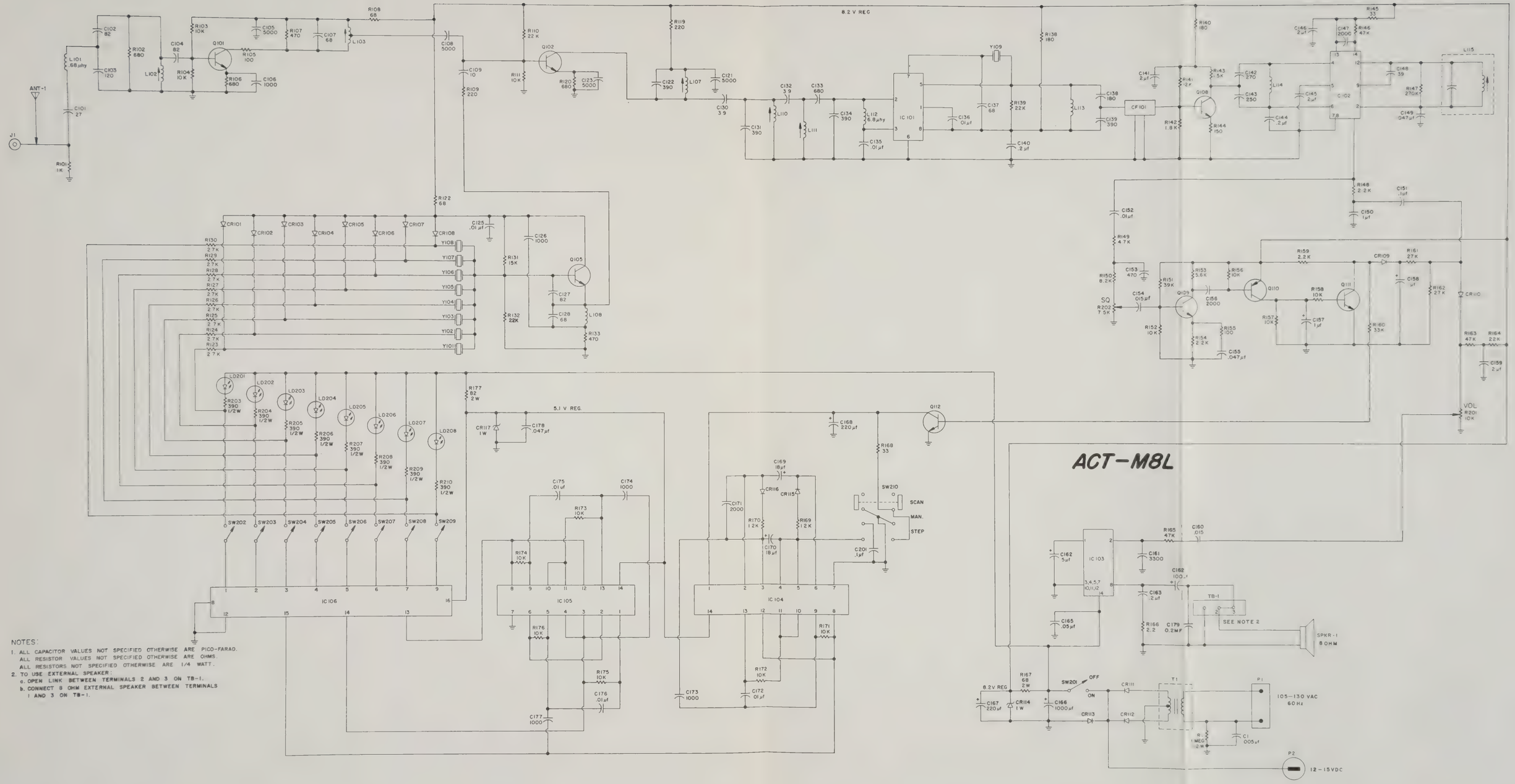
3-12 SCHEMATIC (ACT-M8H)



NOTES:

1. ALL CAPACITOR VALUES NOT SPECIFIED OTHERWISE ARE PICO-FARAD.
   ALL RESISTOR VALUES NOT SPECIFIED OTHERWISE ARE OHMS.
   ALL RESISTORS NOT SPECIFIED OTHERWISE ARE 1/4 WATT.
2. TO USE EXTERNAL SPEAKER:
   a. OPEN LINK BETWEEN TERMINALS 2 AND 3 ON TB-1.
   b. CONNECT 8 OHM EXTERNAL SPEAKER BETWEEN TERMINALS 1 AND 3 ON TB-1.

3-13 SCHEMATIC (ACT-M8L)



NOTES:

1. ALL CAPACITOR VALUES NOT SPECIFIED OTHERWISE ARE PICO-FARAD.
   ALL RESISTOR VALUES NOT SPECIFIED OTHERWISE ARE OHMS.
   ALL RESISTORS NOT SPECIFIED OTHERWISE ARE 1/4 WATT.
2. TO USE EXTERNAL SPEAKER:
   a. OPEN LINK BETWEEN TERMINALS 2 AND 3 ON TB-1.
   b. CONNECT 8 OHM EXTERNAL SPEAKER BETWEEN TERMINALS 1 AND 3 ON TB-1.

3-13 SCHEMATIC (ACT-M8L)

SECTION 4 PARTS LIST

4-1 MAIN BOARD 600-394 (H/L)

Item No.	Description	Part No.
	RESISTORS	
R101	1K, 10%, ¼W	
R102	680 ohm, 10%, ¼W	
R103	10K, 10%, ¼W	
R104	10K, 10%, ¼W	
R105	100 ohm, 10%, ¼W	
R106	680 ohm, 10%, ¼W	
R107	470 ohm, 10%, ¼W	
R108	68 ohm, 10%, ¼W	
R109	220 ohm, 10%, ¼W	
R110	22K, 10%, ¼W	
R111	10K, 10%, ¼W	
R112	10K, 10%, ¼W	
R113	10K, 10%, ¼W	
R114	100 ohm, 10%, ¼W	
R115	680 ohm, 10%, ¼W	
R116	68 ohm, 10%, ¼W	
R117	22K, 10%, ¼W	
R118	10K, 10%, ¼W	
R119	220 ohm, 10%, ¼W	
R120	680 ohm, 10%, ¼W	
R121	100 ohm, 10%, ¼W	
R122	68 ohm, 10%, ¼W	
R123	2.7K, 10%, ¼W	
R124	2.7K, 10%, ¼W	
R125	2.7K, 10%, ¼W	
R126	2.7K, 10%, ¼W	
R127	2.7K, 10%, ¼W	
R128	2.7K, 10%, ¼W	
R129	2.7K, 10%, ¼W	
R130	2.7K, 10%, ¼W	
R131	10K, 10%, ¼W	
R132	39K, 10%, ¼W	
R133	470 ohm, 10%, ¼W	
R134	4.7K, 10%, ¼W	
R135	10K, 10%, ¼W	
R136	4.7K, 10%, ¼W	
R137	10K, 10%, ¼W	
R138	180 ohm, 10%, ¼W	
R139	22K, 10%, ¼W	
R140	180 ohm, 10%, ¼W	
R141	12K, 10%, ¼W	
R142	1.8K, 10%, ¼W	
R143	1.5K, 10%, ¼W	
R144	150 ohm, 10%, ¼W	
R145	33 ohm, 10%, ¼W	
R146	47K, 10%, ¼W	
R147	270K, 10%, ¼W	
R148	2.2K, 10%, ¼W	
R149	4.7K, 10%, ¼W	
R150	8.2K, 10%, ¼W	
R151	39K, 10%, ¼W	
R152	10K, 10%, ¼W	
R153	5.6K, 10%, ¼W	
R154	2.2K, 10%, ¼W	
R155	100 ohm, 10%, ¼W	
R156	10K, 10%, ¼W	
R157	10K, 10%, ¼W	
R158	10K, 10%, ¼W	
R159	2.2K, 10%, ¼W	
R160	33K, 10%, ¼W	
R161	27K, 10%, ¼W	
R162	27K, 10%, ¼W	
R163	47K, 10%, ¼W	
R164	22K, 10%, ¼W	
R165	47K, 10%, ¼W	
R166	2.2 ohm, 10%, ¼W	
R167	68 ohm, 5%, 2W, W.W.	4710-0680-031
R168	33 ohm, 10%, ¼W	
R169	1.2K, 10%, ¼W	
R170	1.2K, 10%, ¼W	
R171	10K, 10%, ¼W	
R172	10K, 10%, ¼W	
R173	10K, 10%, ¼W	
R174	10K, 10%, ¼W	
R175	10K, 10%, ¼W	
R176	10K, 10%, ¼W	
R177	82 ohm, 5%, 2W, W.W.	4710-0820-031
	CAPACITORS	
C101	27pf, 10%, NPO (Disc)	1500-0270-605
C102	82pf, 5%, NPO (Disc)	1524-0820-002
C103	120pf, 5%, 50V (Mica)	1506-0121-550
C104	82pf, 5%, NPO (Disc)	1524-0820-002
C105	.005mf, +80%−20% 500V Z5U (Disc)	1503-0502-002
C106	.001mf, +80%−20% 500V Z5U (Disc)	1503-0102-001
C107	68pf, 5%, NPO (Disc)	1524-0680-002
C108	.005mf, +80%−20% 500V Z5U (Disc)	1503-0502-002
C109	10pf, 10%, NPO (Disc)	1500-0100-905
C110	27pf, 10%, NPO (Disc)	1500-0270-605
C111	2.7pf, ±.25pf NPO (Disc)	1500-0279-205
C112	8.2pf, 10%, NPO (Disc)	1500-0829-905
C113	.47pf, 10% Type MC (Composition)	1510-0478-900
C114	5.6pf, 10%, NPO (Disc)	1500-0569-905
C115	3.9pf, 10%, NPO (Disc)	1500-0399-905
C116	.001mf, +80%−20% 500V Z5U (Disc)	1503-0102-001
C117	.005mf, +80%−20% 500V Z5U (Disc)	1503-0502-002
C118	5.6pf, 10%, NPO (Disc)	1500-0569-905
C119	.005mf, +80%−20% 500V Z5U (Disc)	1503-0502-002
C120	1.0pf, 10%, Type MC (Composition)	1510-0010-900
C121	.005mf, +80%−20% 500V Z5U (Disc)	1503-0502-002
C122	390pf, 5%, 50V (Mica)	1506-0391-550
C123	.005mf, +80%−20% 500V Z5U (Disc)	1503-0502-002
C124	.005mf, +80%−20% 500V Z5U (Disc)	1503-0502-002
C125	.01mf, +80%−20% 500V Z5U (Disc)	1503-0103-001
C126	.001mf, +80%−20% 500V Z5U (Disc)	1503-0102-001
C127	82pf, 5%, NPO (Disc)	1524-0820-002
C128	68pf, 5%, NPO (Disc)	1524-0680-002
C129	15pf, 10%, NPO (Disc)	1500-0150-605
C130	3.9pf, 10%, NPO (Disc)	1500-0399-905
C131	390pf, 5%, 50V (Mica)	1506-0391-550
C132	3.9pf, 10%, NPO (Disc)	1500-0399-905
C133	680pf, 5%, 50V (Mica)	1506-0681-550
C134	390pf, 5%, 50V (Mica)	1506-0391-550
C135	.01mf, +80%−20% 25V BC-25 (Disc)	1502-0103-004

Item No.	Description	Part No.
C136	.01mf, +80%−20% 25V BC-25 (Disc)	1502-0103-004
C137	68pf, 5%, NPO (Disc)	1524-0680-002
C138	180pf, 5%, 50V (Mica)	1506-0181-550
C139	390pf, 5%, 50V (Mica)	1506-0391-550
C140	.2mf, +80%−20% 12V BC-12 (Disc)	1502-0204-006
C141	.2mf, +80%−20% 12V BC-12 (Disc)	1502-0204-006
C142	270pf, 5%, 50V (Mica)	1506-0271-550
C143	250pf, 5%, 50V (Mica)	1506-0251-550
C144	.2mf, +80%−20% 12V BC-12 (Disc)	1502-0204-006
C145	.2mf, +80%−20% 12V BC-12 (Disc)	1502-0204-006
C146	.2mf, +80%−20% 12V BC-12 (Disc)	1502-0204-006
C147	.002pf, 20%, 50V Z5F	1523-0202-002
C148	39pf, 10%, NPO (Disc)	1500-0390-650
C149	.047mf, 10%, 100V (Mylar Film)	1508-0473-610
C150	.1mf, 20%, 12V BC-12 (Disc)	1502-0104-005
C151	.1mf, 20%, 12V BC-12 (Disc)	1502-0104-005
C152	.01mf, +80%−20% 25V BC-25 (Disc)	1502-0103-004
C153	470pf, 20%, 50V Z5F (Disc)	1523-0471-002
C154	.015mf, 10%, 100V (Mylar Film)	1508-0153-610
C155	.047mf, 10%, 100V (Mylar Film)	1508-0473-610
C156	.002pf, 20%, 50V Z5F (Disc)	1523-0202-002
C157	1mf, 16V, 85D, Type U (Electrolytic)	1513-0010-002
C158	1mf, 16V, 85D, Type U (Electrolytic)	1513-0010-002
C159	.2mf, +80%−20% 25V BC-12 (Disc)	1502-0204-006
C160	.015mf, 10%, 100V (Mylar Film)	1508-0153-610
C161	.0033mf, 10%, 100V (Mylar Film)	1508-0332-610
C162	5mf, 10V, 85D, Type U (Electrolytic)	1513-0050-001
C163	.2mf, +80%−20% 25V BC-12 (Disc)	1502-0204-006
C164	100mf, 16V, 85D, Type U Electrolytic	1513-0101-002
C165	.05mf, +80%−20% 25V (Disc)	1502-0503-004
C166	1000mf, 16V, Type U (Electrolytic)	1513-0102-002
C167	250mf, 10V, 85D, Type U (Electrolytic)	1513-0251-001
C168	250mf, 10V, 85D, Type U (Electrolytic)	1513-0251-001
C169	18mf, 20%, 10V, 85D, Type U (Electrolytic)	1513-0180-005
C170	18mf, 20%, 10V, 85D, Type U (Electrolytic)	1513-0180-005
C171	.002pf, 20%, 50V Z5F (Disc)	1523-0202-002
C172	.01mf, +80%−20% 25V BC-25 (Disc)	1502-0103-004
C173	.001mf, +80%−20% 500V Z5U (Disc)	1503-0102-001
C174	.001mf, +80%−20% 500V Z5U (Disc)	1503-0102-001
C175	.01mf, +80%−20% 25V BC-25 (Disc)	1502-0103-004
C176	.01mf, +80%−20% 25V BC-25 (Disc)	1502-0103-004
C177	.001mf, +80%−20% 500V Z5U (Disc)	1503-0102-001
C178	.047mf, 10%, 100V (Mylar Film)	1508-0473-610
C179	.2mf, +80%−20% 12V BC-12 (Disc)	1502-0204-006

COILS

L101	Choke, .68uhy	1802-0688-003
L102	Coil, RF Input (Grn)	1800-3152-005
L103	Coil, Ant (Yel)	1800-3152-004
L104	Coil, RF Input (Red)	1800-3152-002
L105	Coil, RF Input (Red)	1800-3152-002
L106	Coil, Ant (Org)	1800-3152-003
L107	Coil, RF (Wht)	1800-3191-401
L108	Coil, Osc	1801-1236-900
L109	Coil, RF Inj (Wht)	1800-3152-009
L110	Coil, RF (Wht)	1800-3191-401
L111	Coil, RF (Yel)	1800-3191-402
L112	Choke 6.8uhy. 10%	1802-0689-003
L113	Choke, RF, 10%	1803-3238-600
L114	Choke, RF, 10%	1803-3238-600
L115	Coil, Quadrature	1800-3151-700

TRANSISTORS

Q101	Silicon, NPN SPS-1473 (RT)	4801-0000-035
Q102	Silicon, NPN SPS-1473 (RT)	4801-0000-035
Q103	Silicon, NPN SPS-1473 (RT)	4801-0000-035
Q104	Silicon, NPN SPS-1473 (RT)	4801-0000-035
Q105	Silicon, NPN SM-4306-5	4801-0000-100
Q106	Silicon, NPN SPS-1539 (WT)	4801-0000-060
Q107	Silicon, NPN SPS-1539 (WT)	4801-0000-060
Q108	Silicon, NPN SPS-952	4801-0000-010
Q109	Silicon, NPN SPS-952	4801-0000-010
Q110	Silicon, NPN SPS-1539 (WT)	4801-0000-060
Q111	Silicon, NPN SPS-952	4801-0000-010
Q112	Silicon, NPN SPS-952	4801-0000-010

NOTE: RT=Red Top WT=White Top

INTEGRATED CIRCUITS

IC101	Integrated Circuit MC-1550P	3130-3167-901
IC102	Integrated Circuit MC-13579	3130-3157-603
IC103	Integrated Circuit LM-380N	3130-3157-614
IC104	Integrated Circuit MC-7400P	3130-3157-604
IC105	Integrated Circuit MC-7400P	3130-3157-604
IC106	Integrated Circuit SN-74145N	3130-3193-507

DIODES

CR101	Germanium-Junction Signal	4807-1233-900
CR102	Germanium-Junction Signal	4807-1233-900
CR103	Germanium-Junction Signal	4807-1233-900
CR104	Germanium-Junction Signal	4807-1233-900
CR105	Germanium-Junction Signal	4807-1233-900
CR106	Germanium-Junction Signal	4807-1233-900
CR107	Germanium-Junction Signal	4807-1233-900
CR108	Germanium-Junction Signal	4807-1233-900
CR109	Diode, Silicon IN4148	4805-1241-200
CR110	Diode, Silicon IN4148	4805-1241-200
CR111	Diode, Silicon Rectifier IN4002	4806-0000-004
CR112	Diode, Silicon Rectifier IN4002	4806-0000-004
CR113	Diode, Silicon Rectifier IN4002	4806-0000-004
CR114	Diode, Zener 8.2V	4808-0000-009
CR115	Diode, Silicon IN4148	4805-1241-200
CR116	Diode, Silicon IN4148	4805-1241-200
CR117	Diode, Zener 5% 5.1V	4808-0000-007
CR118	Diode, Silicon IN4148	4805-1241-200
CR119	Diode, Silicon IN4148	4805-1241-200
CR120	Diode, Silicon IN4148	4805-1241-200
CR121	Diode, Silicon IN4148	4805-1241-200
CR122	Diode, Silicon IN4148	4805-1241-200
CR123	Diode, Silicon IN4148	4805-1241-200
CR124	Diode, Silicon IN4148	4805-1241-200
CR125	Diode, Silicon IN4148	4805-1241-200

FILTER

CF101	455 KHz Ceramic Filter	2700-0000-007

CRYSTAL

Y109	10.245 MHz	2301-3151-601

Item No.	Description	Part No.
	RESISTORS	
R112	10K, 10%, ¼W	
R113	10K, 10%, ¼W	
R114	100 ohm, 10%, ¼W	
R115	680 ohm, 10%, ¼W	
R116	68 ohm, 10%, ¼W	
R117	22K, 10%, ¼W	
R118	10K, 10%, ¼W	
R119	220 ohm, 10%, ¼W	
R120	680 ohm, 10%, ¼W	
R122	68 ohm, 10%, ¼W	
R123	2.7K, 10%, ¼W	
R124	2.7K, 10%, ¼W	
R125	2.7K, 10%, ¼W	
R126	2.7K, 10%, ¼W	
R127	2.7K, 10%, ¼W	
R128	2.7K, 10%, ¼W	
R129	2.7K, 10%, ¼W	
R130	2.7K, 10%, ¼W	
R131	10K, 10%, ¼W	
R132	39K, 10%, ¼W	
R133	470 ohm, 10%, ¼W	
R138	180 ohm, 10%, ¼W	
R139	22K, 10%, ¼W	
R140	180 ohm, 10%, ¼W	
R141	12K, 10%, ¼W	
R142	1.8K, 10%, ¼W	
R143	1.5K, 10%, ¼W	
R144	150 ohm, 10%, ¼W	
R145	33 ohm, 10%, ¼W	
R146	47K, 10%, ¼W	
R147	270K, 10%, ¼W	
R148	2.2K, 10%, ¼W	
R149	4.7K, 10%, ¼W	
R150	8.2K, 10%, ¼W	
R151	39K, 10%, ¼W	
R152	10K, 10%, ¼W	
R153	5.6K, 10%, ¼W	
R154	2.2K, 10%, ¼W	
R155	100 ohm, 10%, ¼W	
R156	10K, 10%, ¼W	
R157	10K, 10%, ¼W	
R158	10K, 10%, ¼W	
R159	2.2K, 10%, ¼W	
R160	33K, 10%, ¼W	
R161	27K, 10%, ¼W	
R162	27K, 10%, ¼W	
R163	47K, 10%, ¼W	
R164	22K, 10%, ¼W	
R165	47K, 10%, ¼W	
R166	2.2 ohm, 10%, ¼W	
R167	68 ohm, 5%, 2W, W.W.	4710-0680-031
R168	33 ohm, 10%, ¼W	
R169	1.2K, 10%, ¼W	
R170	1.2K, 10%, ¼W	
R171	10K, 10%, ¼W	
R172	10K, 10%, ¼W	
R173	10K, 10%, ¼W	
R174	10K, 10%, ¼W	
R175	10K, 10%, ¼W	
R176	10K, 10%, ¼W	
R177	82 ohm, 5%, 2W, W.W.	
	CAPACITORS	
C112	10pf, 10%, NPO (Disc)	1500-0100-905
C113	.47pf, 10%, Type MC (Composition)	1510-0478-900
C114	5.6pf, 10%, NPO (Disc)	1500-0569-905
C115	3.9pf, 10%, NPO (Disc)	1500-0399-905
C116	.001mf, +80%−20% 500V Z5U (Disc)	1503-0102-001
C117	.005mf, +80%−20% 500V Z5U (Disc)	1503-0502-002
C118	5.6pf, 10%, NPO (Disc)	1500-0569-905
C119	.005mf, +80%−20% 500V Z5U (Disc)	1503-0502-002
C120	1.0pf, 10%, Type MC (Composition)	1510-0010-900
C121	.005mf, +80%−20% 500V Z5U (Disc)	1503-0502-002
C122	390pf, 5%, 50V (Mica)	1506-0391-550
C124	.005mf, +80%−20% 500V Z5U (Disc)	1503-0502-002
C125	.01mf, +80%−20% 500V Z5U (Disc)	1503-0103-001
C126	.001mf, +80%−20% 500V Z5U (Disc)	1503-0102-001
C127	82pf, 5%, NPO (Disc)	1524-0820-002
C128	68pf, 5%, NPO (Disc)	1524-0680-002
C129	15pf, 10% NPO (Disc)	1500-0150-605
C130	3.9pf, 10%, NPO (Disc)	1500-0399-905
C131	390pf, 5%, 50V (Mica)	1506-0391-550
C132	3.9pf, 10%, NPO (Disc)	1500-0399-905
C133	680pf, 5%, 50V (Mica)	1506-0681-550
C134	390pf, 5%, 50V (Mica)	1506-0391-550
C135	.01mf, +80%−20% 25V BC-25 (Disc)	1502-0103-004
C136	.01mf, +80%−20% 25V BC-25 (Disc)	1502-0103-004
C137	68pf, 5%, NPO (Disc)	1524-0680-002
C138	180pf, 5%, 50V (Mica)	1506-0181-550
C139	390pf, 5%, 50V (Mica)	1506-0391-550
C140	.2mf, +80%−20% 12V BC-12 (Disc)	1502-0204-006
C141	.2mf, +80%−20% 12V BC-12 (Disc)	1502-0204-006
C142	270pf, 5%, 50V (Mica)	1506-0271-550
C143	250pf, 5%, 50V (Mica)	1506-0251-550
C144	.2mf, +80%−20% 12V BC-12 (Disc)	1502-0204-006
C145	.2mf, +80%−20% 12V BC-12 (Disc)	1502-0204-006
C146	.2mf, +80%−20% 12V BC-12 (Disc)	1502-0204-006
C147	.002pf, 20%, 50V Z5F (Disc)	1523-0202-002
C148	39pf, 10%, NPO (Disc)	1500-0390-650
C149	.047mf, 10%, 100V (Mylar Film)	1508-0473-610
C150	.1mf, 20%, 12V BC-12 (Disc)	1502-0104-005
C151	.1mf, 20%, 12V BC-12 (Disc)	1502-0104-005
C152	.01mf, +80%−20% 25V BC-25 (Disc)	1502-0103-004
C153	470pf, 20%, 50V Z5F (Disc)	1523-0471-002
C154	.015mf, 10%, 100V (Mylar Film)	1508-0153-610
C155	.047mf, 10%, 100V (Mylar Film)	1508-0473-610
C156	.002pf, 20%, 50V Z5F (Disc)	1523-0202-002
C157	1mf, 16V, 85D, Type U (Electrolytic)	1513-0010-002
C158	1mf, 16V, 85D, Type U (Electrolytic)	1513-0010-002
C159	.2mf, +80%−20% 25V BC-12 (Disc)	1502-0204-006
C160	.015mf, 10%, 100V (Mylar Film)	1508-0153-610
C161	.0033mf, 10%, 100V (Mylar Film)	1508-0332-610
C162	5mf, 10V, 85D, Type U (Electrolytic)	1513-0050-001
C163	.2mf, +80%−20% 25V BC-12 (Disc)	1502-0204-006
C164	100mf, 16V, 85D, Type U (Electrolytic)	1513-0101-002

Item No.	Description	Part No.
C165	.05mf, +80%–20% 25V (Disc)	1502-0503-004
C166	1000mf, 16V, Type U (Electrolytic)	1513-0102-002
C167	250mf, 10V, 85D, Type U (Electrolytic)	1513-0251-001
C168	250mf, 10V, 85D, Type U (Electrolytic)	1513-0251-001
C169	18mf, 20%, 10V, 85D, Type U (Electrolytic)	1513-0180-005
C170	18mf, 20%, 10V, 85D, Type U (Electrolytic)	1513-0180-005
C171	.002pf, 20%, 50V Z5F (Disc)	1523-0202-002
C172	.01mf, +80%–20% 25V BC-25 (Disc)	1502-0103-004
C173	.001mf, +80%–20% 500V Z5U (Disc)	1503-0102-001
C174	.001mf, +80%–20% 500V Z5U (Disc)	1503-0102-001
C175	.01mf, +80%–20% 25V BC-25 (Disc)	1502-0103-004
C176	.01mf, +80%–20% 25V BC-25 (Disc)	1502-0103-004
C177	.001mf, +80%–20% 500V Z5U (Disc)	1503-0102-001
C178	.047mf, 10%, 100V (Mylar Film)	1508-0473-610
C179	.2mf, +80%–20% 12V BC-12 (Disc)	1502-0204-006

COILS

L104	Coil, Ant (Brn)	1800-3152-001
L105	Coil, RF Input (Red)	1800-3152-002
L106	Coil, Ant (Org)	1800-3152-003
L107	Coil, RF (Wht)	1800-3191-401
L108	Coil, Osc	1801-1236-900
L109	Coil, RF Inj (Wht)	1800-3152-009
L110	Coil, RF (Wht)	1800-3191-401
L111	Coil, RF (Yel)	1800-3191-402
L112	Choke, 6.8uhy, 10%	1802-0689-003
L113	Choke, RF, 10%	1803-3238-600
L114	Choke, RF, 10%	1803-3238-600
L115	Coil, Quadrature	1800-3151-700

TRANSISTORS

Q103	Silicon, NPN SPS-1473 (RT)	4801-0000-035
Q104	Silicon, NPN SPS-1473 (RT)	4801-0000-035
Q105	Silicon, NPN SM-4306-5	4801-0000-100
Q108	Silicon, NPN SPS-952	4801-0000-010
Q109	Silicon, NPN SPS-952	4801-0000-010
Q110	Silicon, NPN SPS-1539 (WT)	4801-0000-060
Q111	Silicon, NPN SPS-952	4801-0000-010
Q112	Silicon, NPN SPS-952	4801-0000-010

NOTE: RT=Red Top WT=White Top

INTEGRATED CIRCUITS

IC101	Integrated Circuit MC-1550P	3130-3167-901
IC102	Integrated Circuit MC-13579	3130-3157-603
IC103	Integrated Circuit LM-380N	3130-3157-614
IC104	Integrated Circuit MC-7400P	3130-3157-604
IC105	Integrated Circuit MC-7400P	3130-3157-604
IC106	Integrated Circuit SN-74145N	3130-3193-507

DIODES

CR101	Germanium-Junction Signal	4807-1233-900
CR102	Germanium-Junction Signal	4807-1233-900
CR103	Germanium-Junction Signal	4807-1233-900
CR104	Germanium-Junction Signal	4807-1233-900
CR105	Germanium-Junction Signal	4807-1233-900
CR106	Germanium-Junction Signal	4807-1233-900
CR107	Germanium-Junction Signal	4807-1233-900
CR108	Germanium-Junction Signal	4807-1233-900
CR109	Diode, Silicon IN4148	4805-1241-200
CR110	Diode, Silicon IN4148	4805-1241-200
CR111	Diode, Silicon Rectifier IN4002	4806-0000-004
CR112	Diode, Silicon Rectifier IN4002	4806-0000-004
CR113	Diode, Silicon Rectifier IN4002	4806-0000-004
CR114	Diode, Zener 8,2V	4808-0000-009
CR115	Diode, Silicon IN4148	4805-1241-200
CR116	Diode, Silicon IN4148	4805-1241-200
CR117	Diode, Zener 5% 5.1V	4808-0000-007

FILTER

CF101	455 KHz Ceramic Filter	2700-0000-007

CRYSTAL

Y109	10.245 MHz	2301-3151-601

4-3 MAIN BOARD 600-394 (L)

RESISTORS

Item No.	Description	Part No.
R101	1K, 10%, ¼W	
R102	680 ohm, 10%, ¼W	
R103	10K, 10%, ¼W	
R104	10K, 10%, ¼W	
R105	100 ohm, 10%, ¼W	
R106	680 ohm, 10%, ¼W	
R107	470 ohm, 10%, ¼W	
R108	68 ohm, 10%, ¼W	
R109	220 ohm, 10%, ¼W	
R110	22K, 10%, ¼W	
R119	220 ohm, 10%, ¼W	
R120	680 ohm, 10%, ¼W	
R122	68 ohm, 10%, ¼W	
R123	2.7K, 10%, ¼W	
R124	2.7K, 10%, ¼W	
R125	2.7K, 10%, ¼W	
R126	2.7K, 10%, ¼W	
R127	2.7K, 10%, ¼W	
R128	2.7K, 10%, ¼W	
R129	2.7K, 10%, ¼W	
R130	2.7K, 10%, ¼W	
R131	10K, 10%, ¼W	
R132	39K, 10%, ¼W	
R133	470 ohm, 10%, ¼W	
R138	180 ohm, 10%, ¼W	
R139	22K, 10%, ¼W	
R140	180 ohm, 10%, ¼W	
R141	12K, 10%, ¼W	
R142	1.8K, 10%, ¼W	
R143	1.5K, 10%, ¼W	
R144	150 ohm, 10%, ¼W	
R145	33 ohm, 10%, ¼W	
R146	47K, 10%, ¼W	
R147	270K, 10%, ¼W	
R148	2.2K, 10%, ¼W	
R149	4.7K, 10%, ¼W	
R150	8.2K, 10%, ¼W	
R151	39K, 10%, ¼W	
R152	10K, 10%, ¼W	
R153	5.6K, 10%, ¼W	
R154	2.2K, 10%, ¼W	
R155	100 ohm, 10%, ¼W	
R156	10K, 10%, ¼W	
R157	10K, 10%, ¼W	
R158	10K, 10%, ¼W	
R159	2.2K, 10%, ¼W	
R160	33K, 10%, ¼W	
R161	27K, 10%, ¼W	
R162	27K, 10%, ¼W	
R163	47K, 10%, ¼W	
R164	22K, 10%, ¼W	
R165	47K, 10%, ¼W	
R166	2.2 ohm, 10%, ¼W	
R167	68 ohm, 5%, 2W, W.W.	4710-0680-031
R168	33 ohm, 10%, ¼W	
R169	1.2K, 10%, ¼W	
R170	1.2K, 10%, ¼W	
R171	10K, 10%, ¼W	
R172	10K, 10%, ¼W	
R173	10K, 10%, ¼W	
R174	10K, 10%, ¼W	
R175	10K, 10%, ¼W	
R176	10K, 10%, ¼W	
R177	82 ohm, 5%, 2W, W.W.	4710-0820-031

CAPACITORS

Item No.	Description	Part No.
C101	27pf, 10%, NPO (Disc)	1500-0270-605
C102	82pf, 5%, NPO (Disc)	1524-0820-002
C103	120pf, 5%, 50V (Mica)	1506-0121-550
C104	82pf, 5%, NPO (Disc)	1524-0820-002
C105	.005mf, +80%−20% 500V Z5U (Disc)	1503-0502-002
C106	.001mf, +80%−20% 500V Z5U (Disc)	1503-0102-001
C107	68pf, 5%, NPO (Disc)	1524-0680-002
C108	.005mf, +80%−20% 500V Z5U (Disc)	1503-0502-002
C109	10pf, 10%, NPO (Disc)	1500-0100-905
C121	.005mf, +80%−20% 500V Z5U (Disc)	1503-0502-002
C122	390pf, 5%, 50V (Mica)	1506-0391-550
C123	.005mf, +80%−20% 500V Z5U (Disc)	1503-0502-002
C125	.01mf, +80%−20% 500V Z5U (Disc)	1503-0103-001
C126	.001mf, +80%−20% 500V Z5U (Disc)	1503-0102-001
C127	82pf, 5%, NPO (Disc)	1524-0820-002
C128	68pf, 5%, NPO (Disc)	1524-0680-002
C130	3.9pf, 10%, NPO (Disc)	1500-0399-905
C131	390pf, 5%, 50V (Mica)	1506-0391-550
C132	3.9pf, 10%, NPO (Disc)	1500-0399-905
C133	680pf, 5%, 50V (Mica)	1506-0681-550
C134	390pf, 5%, 50V (Mica)	1506-0391-550
C135	.01mf, +80%−20% 25V BC-25 (Disc)	1502-0103-004
C136	.01mf, +80%−20% 25V BC-25 (Disc)	1502-0103-004
C137	68pf, 5%, NPO (Disc)	1524-0680-002
C138	180pf, 5%, 50V (Mica)	1506-0181-550
C139	390pf, 5%, 50V (Mica)	1506-0391-550
C140	.2mf, +80%−20% 12V BC-12 (Disc)	1502-0204-006
C141	.2mf, +80%−20% 12V BC-12 (Disc)	1502-0204-006
C142	270pf, 5%, 50V (Mica)	1506-0271-550
C143	250pf, 5%, 50V (Mica)	1506-0251-550
C144	.2mf, +80%−20% 12V BC-12 (Disc)	1502-0204-006
C145	.2mf, +80%−20% 12V BC-12 (Disc)	1502-0204-006
C146	.2mf, +80%−20% 12V BC-12 (Disc)	1502-0204-006
C147	.002pf, 20%, 50V Z5F	1523-0202-002
C148	39pf, 10%, NPO (Disc)	1500-0390-650
C149	.047mf, 10%, 100V (Mylar Film)	1508-0473-610
C150	.1mf, 20%, 12V BC-12 (Disc)	1502-0104-005
C151	.1mf, 20%, 12V BC-12 (Disc)	1502-0104-005
C152	.01mf, +80%−20% 25V BC-25 (Disc)	1502-0103-004
C153	470pf, 20%, 50V Z5F (Disc)	1523-0471-002
C154	.015mf, 10%, 100V (Mylar Film)	1508-0153-610
C155	.047mf, 10%, 100V (Mylar Film)	1508-0473-610
C156	.002pf, 20%, 50V Z5F (Disc)	1523-0202-002
C157	1mf, 16V, 85D, Type U (Electrolytic)	1513-0010-002
C158	1mf, 16V, 85D, Type U (Electrolytic)	1513-0010-002
C159	.2mf, +80%−20% 25V BC-12 (Disc)	1502-0204-006
C160	.015mf, 10%, 100V (Mylar Film)	1508-0153-610
C161	.0033mf, 10%, 100V (Mylar Film)	1508-0332-610

Item No.	Description	Part No.
C162	5mf, 10V, 85D, Type U (Electrolytic)	1513-0050-001
C163	.2mf, +80%−20% 25V BC-12 (Disc)	1502-0204-006
C164	100mf, 16V, 85D, Type U Electrolytic	1513-0101-002
C165	.05mf, +80%−20% 25V (Disc)	1502-0503-004
C166	1000mf, 16V, Type U (Electrolytic)	1513-0102-002
C167	250mf, 10V, 85D, Type U (Electrolytic)	1513-0251-001
C168	250mf, 10V, 85D, Type U (Electrolytic)	1513-0251-001
C169	18mf, 20%, 10V, 85D, Type U (Electrolytic)	1513-0180-005
C170	18mf, 20%, 10V, 85D, Type U (Electrolytic)	1513-0180-005
C171	.002pf, 20%, 50V Z5F (Disc)	1523-0202-002
C172	.01mf, +80%−20% 25V BC-25 (Disc)	1502-0103-004
C173	.001mf, +80%−20% 500V Z5U (Disc)	1503-0102-001
C174	.001mf, +80%−20% 500V Z5U (Disc)	1503-0102-001
C175	.01mf, +80%−20% 25V BC-25 (Disc)	1502-0103-004
C176	.01mf, +80%−20% 25V BC-25 (Disc)	1502-0103-004
C177	.001mf, +80%−20% 500V Z5U (Disc)	1503-0102-001
C178	.047mf, 10%, 100V (Mylar Film)	1508-0473-610
C179	.2mf, +80%−20% 12V BC-12 (Disc)	1502-0204-006

COILS

L101	Choke, .68uhy	1802-0688-003
L102	Coil, RF Input (Grn)	1800-3152-005
L103	Coil, Ant (Yel)	1800-3152-004
L107	Coil, RF (Wht)	1800-3191-401
L108	Coil, Osc	1801-1236-900
L110	Coil, RF (Wht)	1800-3191-401
L111	Coil, RF (Yel)	1800-3191-402
L112	Choke, 6.8uhy, 10%	1802-0689-003
L113	Choke, RF, 10%	1803-3238-600
L114	Choke, RF, 10%	1803-3238-600
L115	Coil, Quadrature	1800-3151-700

TRANSISTORS

Q101	Silicon, NPN SPS-1473 (RT)	4801-0000-035
Q102	Silicon, NPN SPS-1473 (RT)	4801-0000-035
Q105	Silicon, NPN SM-4306-5	4801-0000-100
Q108	Silicon, NPN SPS-952	4801-0000-010
Q109	Silicon, NPN SPS-952	4801-0000-010
Q110	Silicon, NPN SPS-1539 (WT)	4801-0000-060
Q111	Silicon, NPN SPS-952	4801-0000-010
Q112	Silicon, NPN SPS-952	4801-0000-010

NOTE: RT=Red Top WT=White Top

INTEGRATED CIRCUITS

IC101	Integrated Circuit MC-1550P	3130-3167-901
IC102	Integrated Circuit MC-13579	3130-3157-603
IC103	Integrated Circuit LM-380N	3130-3157-614
IC104	Integrated Circuit MC-7400P	3130-3157-604
IC105	Integrated Circuit MC-7400P	3130-3157-604
IC106	Integrated Circuit SN-74145N	3130-3193-507

DIODES

CR101	Germanium-Junction Signal	4807-1233-900
CR102	Germanium-Junction Signal	4807-1233-900
CR103	Germanium-Junction Signal	4807-1233-900
CR104	Germanium-Junction Signal	4807-1233-900
CR105	Germanium-Junction Signal	4807-1233-900
CR106	Germanium-Junction Signal	4807-1233-900
CR107	Germanium-Junction Signal	4807-1233-900
CR108	Germanium-Junction Signal	4807-1233-900
CR109	Diode, Silicon IN4148	4805-1241-200
CR110	Diode, Silicon IN4148	4805-1241-200
CR111	Diode, Silicon Rectifier IN4002	4806-0000-004
CR112	Diode, Silicon Rectifier IN4002	4806-0000-004
CR113	Diode, Silicon Rectifier IN4002	4806-0000-004
CR114	Diode, Zener 8.2V	4808-0000-009
CR115	Diode, Silicon IN4148	4805-1241-200
CR116	Diode, Silicon IN4148	4805-1241-200
CR117	Diode, Zener 5% 5.1V	4808-0000-007

FILTER

CF101	455 KHz Ceramic Filter	2700-0000-007

CRYSTAL

Y109	10.245 MHz	2301-3151-601